Vol. II

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Supreme Court of the United States

OCTOBER TERM, 1926

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No. 358

ALBERT OTTINGER, AS ATTORNEY GENERAL OF THE STATE OF NEW YORK, APPELLANT,

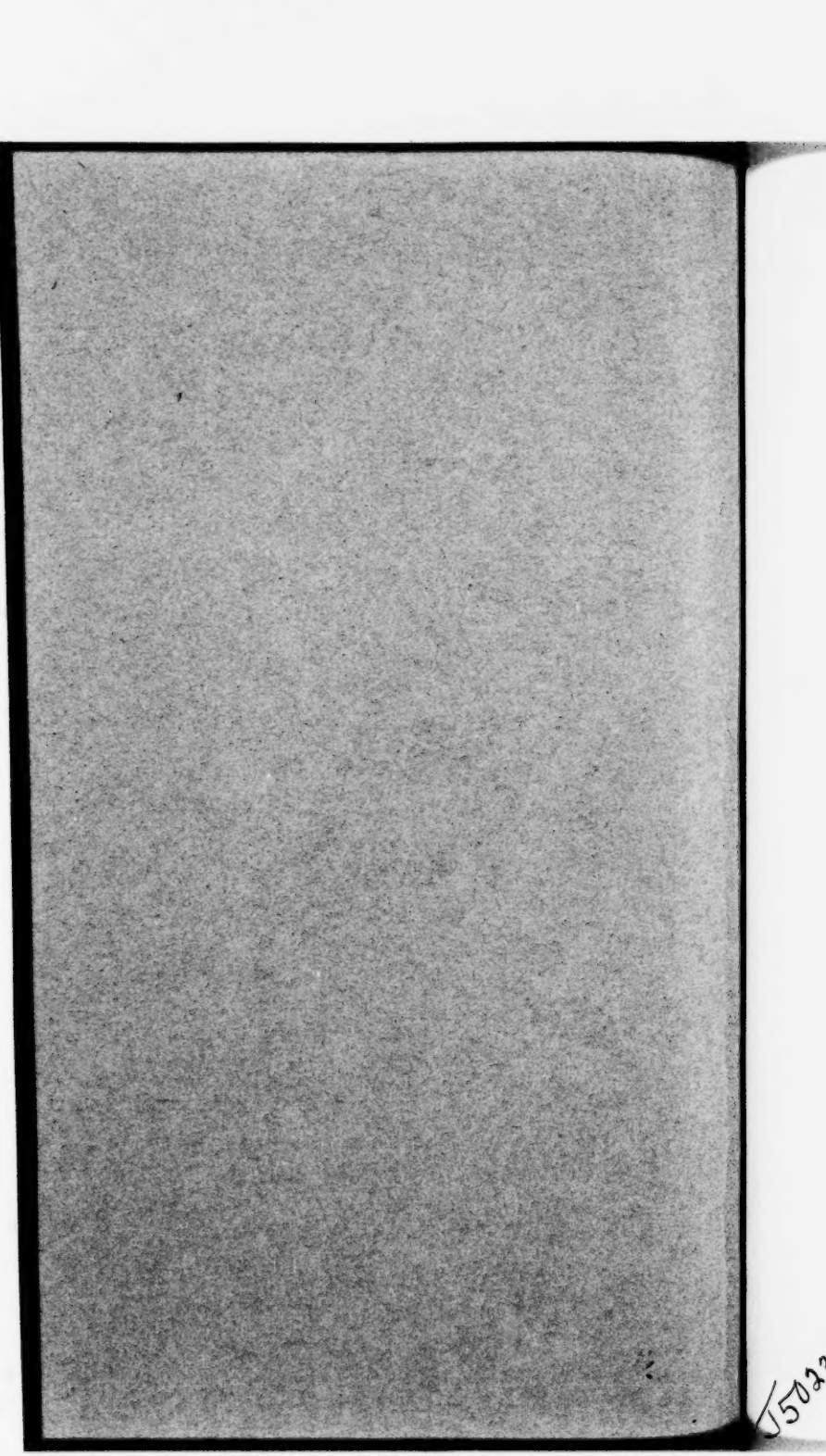
vs.

THE BROOKLYN UNION GAS COMPANY

APPEAL FROM THE DISTRICT COURT OF THE UNITED STATES FOR THE EASTERN DISTRICT OF NEW YORK

FILED APRIL 20, 1926

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SUPREME COURT OF THE UNITED STATES

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[fol. 900] Brooklyn, New York, February 27th, 1924.

DAVID BIRNEY STOKES

Direct:

I am General Sales Manager of the United States Cast Iron Pipe & Foundry Company, manufacturers of cast iron pipe. I have been in this business for thirteen years.

In general I supervise the prices that we make on our product all over the country. I have kept myself informed during my connection with the company with the prices paid in New York City for cast iron pipe and such pipe as is used for the transmission of gas, what is commonly known as gas pipe as well as water pipe and in all other sections of the country. That is part of my duty, of course. Our sales of course embrace cast iron pipe for many and various uses, and it is up to me to keep myself informed on the prices at which different types of pipe are sold. That includes prices charged by other companies than our own.

The prices prevailing on June 1, 1923, for cast iron pipe of various sizes are six inch and larger, Class B, the heavier water pipe, sixty-two dollars and sixty cents to sixty-three dollars per net ton delivered to New York; for gas pipe, the differential over and above the price for water pipe is $5 per ton. It was at that time, and still is. The prices also at that particular time and at various other times due to demands for certain sizes, were carrying a premium in one diameter or another. On six inch pipe alone at that particular time there was a premium of from two or three dollars a ton over these figures that I have just given. Growing out of temporary conditions of supply and demand for four inch pipe, there is a differential over six [fol. 901] inch and larger pipe of four dollars to five dollars. The differential was not the result of some temporary conditions. It is a differential established by the difference in the cost of manufacture in the different sizes. There was a premium on the four inch pipe at that time in addition to the differential. It is hard to say what it was. It is what you get, really. It might have been $2, it might have been $3. In certain cases, I know of orders that we took for four inch pipe alone where a premium was paid of from four dollars to five dollars a ton. We could not get a

premium there was not any. There is a standard differential on three inch pipe of $11 a ton over the price of six, and larger. That differential also is based on the cost of manufacture. As to whether in practice concessions in prices would be granted or whether an increase would be asked, would depend entirely on the conditions at the time at which the order might be offered in the market. In other words, there is no such practice upon that subject. It is a matter of bargaining and supply and demand. Concessions on winter deliveries is a long story. Sometime ago the various manufacturers of pipe started a campaign to have buyers purchase during the winter so that we could operate our shops continuously, rather more on a level than peaks and valleys. At that time it was difficult to operate our shops fully through the winter, and a tonnage which might be placed for manufacture during the winter carried a slight concession in price. The fruits of the campaign were so great that today there would be no concession in the price so far as the manufacturing cost was concerned. [fol. 902] But in the history of the pipe business, we will say that on an average—it is not always true, but on an average, somewhat lower prices prevail in the winter than during we will say the spring and summer, because you will find also that the trend of pig iron prices is higher as the year advances. That on an average is true.

I am familiar with a great many of the various trade journals which publish prices of cast iron pipe, such as the Iron Age and Gas Age Record. I don't know that I could name every one. I know their methods of obtaining data. A great many of the bids made by different gas iron pipe manufacturers to municipalities are open and public. Those figures of course are available to representatives of the trade journals. In addition to that, they canvassed our offices, I say our offices, because they have canvassed our office when I have had charge our eastern sales and when I had charge of our western sales in Chicago and since I have come back to Philadelphia, requesting information as to prevailing figures, and also requesting information as to what the prospects are, etc. They do not do that at any stated intervals, and it has not been customary for us lately to volunteer very much information, because we found that by volunteering too much information to them we would

give our competitors more information than we wanted them to have. So that the information that they obtain from us on the question of prices and general market conditions has been at their own solicitation and at intermittent intervals. * * *

[fol. 903] I don't know without looking it up how much 6 inch cast iron pipe was in November or December, 1922. It was lower than on June 1st, 1923. Our market price at June 1st, 1923 without the premium for 6 inch and larger was $67.60. I think it was a little lower in December, 1922.

As I recall, the trend of figures was upward, but I am not certain of the amount. I may be wrong. I am simply talking from memory and depending upon my experience. All I know from my memory, is that cast-iron pipe increased in price from December, 1922 to June *lost*, 1923. How much of an increase, I cannot tell. It maintained that increase from June through August 3rd. I should say that there was a slight increase about the 1st of November. I am not certain as to the date. I don't know exactly, but it was in the neighborhood of a dollar or two dollars a ton less.

[fol. 904] * * *

The market price of that is for six inch Class B, water pipe or heavier cast iron pipe in December 1922, was $52 net ton f. o. b. Burlington. The differential at that time was $4 a ton so it would be $56 for six inch gas pipe in December 1922 in New York, f. o. b. Burlington. That is freight rate per ton about $2.60 to New York. That is the present rate. The four inch size at that time, December 1922 was $4 a ton delivered in New York. The freight rate is about the same, delivered in New York. In January 1923, the price was approximately the same; in February there was an advance of about $3 ton. I do not know what time we made that advance in February. It advanced from 56 f. o. b. Burlington to fifty nine, is my recollection. In April there was an advance of about $2 a ton, an additional advance of about $3 a ton in May. The differential was also advanced about April 1st from $4 to $5 a ton, so that it would make it approximately $62 f. o. b. Burlington in April, and $65 in May. In June that price held until about October 15th or November 1st, I think. The price during December 1923 was $63, approximately $2 a ton less than that. The price in January and February 1923 for 6

inch gas pipe and larger f. o. b. New York is from $64.60 to $65.60 a ton. The freight rate is $2.60 that has been constant so that it would be f. o. b. $62 to $63 Burlington. I should say that drop of about $3 a ton started a little bit prior to November 1st. I cannot say without investigating it whether we actually sold the Brooklyn Union Company 1,815 tons of 6 inch pipe during that month at $56.25. * * *

[fol. 905] During the months of May and June 1923, this is made up on a base price, which was our base price, Class B. I cannot specifically recollect any sales of gas pipe at all, during those months in the Metropolitan District. I do not remember it any of those sales that we made in the months of May and June 1923, were made when our competitors were so circumstanced that they could not fill orders that the consumers desired to place, or that we were so circumstanced that we could fill those orders and inflated the price accordingly. Of course there was an extremely heavy demand for pipe and all pipe companies were well filled with orders. I say that because we keep track of it and lots of those public openings of bids, we would see what they can offer in the way of delivery. There was heavy demand in the market for water and gas pipe all through 1923, but I cannot say particularly whether there there was from the Metropolitan District or not; I do not know. * * *

[fols. 906 & 907] Cast iron pipe may increase in cost by reason of the demand throughout the summer months, and then has a tendency to fall slightly in the fall by reason of the lessened demand but no more than any other commercial business. We want to take up the winter slack in our business. There has been a winter slack in the past. Our program has ironed it out so that we have more of a level method. The past three or four years we have been able to run our shop fairly full the year round. * * *

[fol. 908] NICHOLAS ENGEL

Direct:

My business is the cast iron pipe. I am the sole proprietor of John Fox & Company and in that capacity I manage the business. The business was established in

1881. I have been with it since I was a boy in 1883. We are the sales agents for the Donaldson Iron Company, Emaus, Pennsylvania, just outside of Allentown. I have kept myself informed and know the prices paid in New York for cast iron gas pipe for more than ten years. The prices prevailing on or about June 1, 1923 for cast iron gas pipe of various sizes delivered in New York are: for 6 inch gas pipe and larger sizes our base price was $68 a net ton at the foundry; 4 inch pipe took a differential of $5 a ton higher than that, and three inch pipe $10 a ton higher than four inch. The freight rate from the foundry to New York is $2.70 a ton. Those prices reflect the market price for pipe of that size and character, prevailing in New York City on that date. * * *

[fol. 909] We could not have supplied the 1190 ton requirement within the specified time. That is true of the 400 tons. There was a specified time of delivery for each item upon which bids were called. The prices we have given were merely the prices that we sold pipe for.

NICHOLAS ENGEL

Redirect:

The prices that I gave were the market prices prevailing in New York on June 1st, 1923. I actually made these sales, and that is why I am of the opinion that that is the market price. I don't know what the market price was at that time of the other companies supplying cast iron pipe but the fact that I received the business makes me feel that that was about the price. The prices were higher. I kept track of prices submitted at various public biddings by other companies and my estimate is based also upon those prices.

[fol. 910] NICHOLAS ENGEL

Recross:

The market price of the cast iron pipe in January, 1923, in August 1923, and November 1923, as disclosed by our actual sales relates only to these particular sales of gas pipe, but I knew what the market price was, having kept

track of public lettings and being anxious to get business, and when I made my price which brought orders to me, I took all that into consideration. In the bids that we have made with the Brooklyn Union Company were what we deemed was the market price. We got that business in November. We made four or five bids up to November in which we did not get the business. In making those bids we bid what we thought was the market price. We got the business.

[fol. 911] February 29, 1924.

HENRY R. BURT

Direct:

I am vice-president and secretary of the Northeastern Construction Company at 101 Park Avenue, New York. My business is Engineering and general contracting. I took a course in civil engineering at Columbia University. Since 1901 I was with the engineer of Maintenance of Way, Pennsylvania Railroad, for about a year thereafter. I was estimator in the Perth Amboy Terra Cotta Company for practically a year and, after that, I was one of the organizers of the Northeastern Construction Company in 1904, and I have been engaged actively in that company ever since. We engage in the construction of almost every type of building and structure, office buildings, warehouses, factory buildings, piers, wharves; in fact, almost every kind of structure that comes under the heading of general contracting. During the last past few years I have been testifying for various gas companies in the City of New York in rate litigation. I have estimated labor and material costs in connection with my business, and continually do so. I purchase material and supervise construction, and, after the completion of the construction upon which we have estimated and purchased material, we make a practice of checking our estimate with our actual costs. We are continually watching the cost of labor and material.

In November, 1919, I prepared an inventory and appraisal of the buildings and certain structures of the [fol. 912] plaintiff. In connection with that work I visited

and inspected the plants and various structures which we appraised. At that time a document or list which was entitled General Description of Buildings and Appurtenances was prepared under my direction. After its completion I testified with reference to it in 1919. I was again retained in 1923. We were notified during May, 1923, that we would probably be called upon to evaluate the buildings of the Brooklyn Union Gas Company, and our contract with the Brooklyn Union Gas Company, I think, was made in the latter part of May. We put a value on the buildings when we were employed. As the first step I visited the plants of the Company, in company with Mr. Atwood. That was during the first week in June, and we also prepared an approximate reproduction value for the purpose of putting in an affidavit for the application for a temporary injunction as I understand it; that is what it was used for, and then I organized a field force to measure up, take the quantities as they occurred in the buildings and the various properties of the Brooklyn Union Gas Company, and instructed them to make a list known as "Changed and unchanged items." That is, changed and unchanged with reference to the 1919 schedule, and with the idea, that all of the buildings would be checked, and that such buildings as were not changed, for those buildings we would use the list of quantities we had already obtained four years ago. I also caused, during the summer, levels to be taken so that the heights of the property surrounding [fol. 913] each building would be known, and I had a great many holes dug, over 100 holes, to determine the type of foundations. That was done whether the building was a changed item or an unchanged item. During the latter part of the summer or fall I went around to the plants and checked up the inventory that had been made, and thereafter the work was again checked mathematically, and I made a separate visit also with reference to the foundations and I made a visit to each building with reference to its condition, and we completed the whole inventory. That was about the end of January, 1924. After this inventory was completed, unit prices were put upon the various items. I actually established the unit prices of labor and material of June 1, 1923. After that had been done, we visited the buildings again. That was done during the summer, prior

to my last visit. I am familiar with the market price of material and rates of pay of labor entering into the construction in this vicinity of structures similar to those of the plaintiff. The sum of the units established by me and which appear in this inventory, represents my opinion of the labor and material cost to reproduce the several structures as of June 1, 1923. I proceeded in fixing these values on the basis of a subcontractor building the buildings for a contractor who would have the contract for the entire plant. Our company, the Northeastern Construction Company, so bids and constructs. I personally prepare estimates for such bidding on the part of our company. [fol. 914] My procedure in arriving at the value shown in my appraisal of the plaintiff's property made for this case has not varied in any particular, as far as the work sheets and the summaries are concerned. The only difference is that we are taking these from a building which exists at the present time, and our usual bidding is taken from plans and specifications. In placing our units and fixing our values, I have used a quite usual method. We estimated this in exactly the same way that I would estimate in bidding against competition. We placed on the buildings a reproduction value, and that is our only value that we have made. Exhibits 171-A for identification and 171-B for Identification are the inventory and appraisal. I have not, in preparing this exhibit, considered adequacy, suitability or usefulness of the structures listed for the plaintiff's business. I have never known the costs of the structures. In other words, I was employed to form an opinion of the cost to reproduce new at the market prices of material and rates of pay for labor prevailing on June 1, 1923, upon the basis stated, such structures as are included in those exhibits 171-A and 171-B, and of the material of which they are composed, built in the manner in which they are built, and with the same general form of construction, but I was not employed to consider or determine whether these structures are proper or adequate. I did not consider or attempt to fix any exchange or sales value at all. I do not buy and sell buildings—simply build them.

[fol. 915] During the examination of the buildings and appurtenances included in Plaintiff's Exhibits 171-A and 171-B for Identification, I found them in very good mainte-

nance and condition. They appeared to have been adequately maintained with reference to repairs and renewals and replacements. In connection with my examination of these buildings and appurtenances included in Plaintiff's Exhibits 171-A and B for Identification, I prepared a schedule (Plaintiff's Exhibit 172 for identification) setting forth what in my opinion are the reasonable expenditures in order to put these buildings and appurtenances in the condition in which they were when new. * * *

(Plaintiff's Exhibits 171-A and B for Identification and Plaintiff's Exhibit 172 for Identification, in evidence, offered by Plaintiff's counsel.)

[fol. 916] (Defendant's Exhibits 171-A, 171-B and 172 for Identification offered in evidence.) Objected to on the ground that they were incompetent irrelevant and immaterial as the buildings appraised have a market value and a reproduction new appraisal, does not show the value of an efficient substitute. Objections overruled and exhibits admitted with exception to defendants.

The total value of the reproduction cost as of June 1st, 1923, of structures and appurtenances, properties of the Brooklyn Union Gas Company, is $7,154,974.85. The expenditures noted upon Plaintiff's Exhibit No. 172 total $20,756. * * *

[fol. 917] When I made my appraisal in 1919, I have no recollection of seeing any buildings on property to which my attention was directed, which buildings I excluded from my appraisal. Such buildings as I have included in my inventory have been constructed since October 1st, 1919. There are quite a number of omissions as well. Buildings that were torn down during the period and disposed of are not included in this inventory. I can give a list of all the buildings included in my present appraisal which were also included in my appraisal of 1919, if given time. The list I have here of the buildings which were included in my 1919 inventory which I found demolished refers to the Williamsburgh Works only. At the Williamsburgh Works I found a tool shed and pump house and a bin and watchman's house on the dock, and an elevated shed and coal runway had been demolished since 1919. * * *

[fol. 918] I have seen as much in my exhibit as it is humanly possible to see. I had on an average of somewhere between eight and twelve men working for me, taking the inventory. While they were making the inventory, I was sometimes there, while they were making parts of it, but most of the time I was doing my checking independent of the men who were taking the inventory. I was checking the 1923 inventory, after they had made it. There were so many visits, and so much checking being done, it is very hard to say exactly how often I was there when they were making the inventory, when they were actually measuring the various items of property. When I took these inventories to check, the work on that particular item had been completed as far as they were concerned. They measured the various items and handed over to me the complete inventory upon that particular phase of the work, and then I would take that inventory and look at that item to see if they had included in there the correct quantities. I looked [fol. 919] at every item of property in 1919, too. The only thing that I did not look at in 1919 inventory was the holes that were dug for the foundation. I have done that as well on this appraisal. As to the result when I looked and when the employee looked, some of them were different and some of them were the same. I could not tell the difference in the quantities in my 1919 appraisal from my 1923 appraisal, in the foundations without an extensive calculation. It sometimes would vary slightly in the type of foundation found. Sometimes it would vary slightly in the size of the footing, the size of the pile capping and the size of the depth, but I could not give you the difference. There is a tremendous number—there are some 450 items, each one having a foundation. I do not recollect any one item where I deviated to any extent. I obtained practically the same quantities as my employees. The variations were very infinitesimal—very small. The employee did not see any length of piles under the foundations; neither did I. A pile is 35 or 40 feet in the ground and you do not see the length. He got that because we assume an average length, which is a 35 or 40 foot pile. I think he saw the piles, but he did not see the length of the piles because that is 35 feet in the ground. I saw the top of the piles and I understand he saw the top of the piles. The tops are very often covered with concrete. The piles are driven into the ground

and covered over with concrete. You have to dig around and under the footing to see the pile—undermine the pile. [fol. 920] I think the deepest hole we dug is about 16 feet. The gas company's men did that, at a point selected by me.

At the Generator house G, Metropolitan Works, we dug a hole in the southeasterly side, and I found a brick wall and wood capping and piles. That is the side away from the canal. There is another one over on 11th Street. That is on the new extension. That hole that we dug was a little over 8 feet deep, probably 10 feet. The hole that we dug by the extension of the generator house was the same depth. There we found concrete and piles under piers, under the new extension of the generator house. Those are the only two holes that we dug at the building. Those two holes that we dug there enabled us to conclude that there were 440 piles there. We took 35 or 40 feet long. It does not make any difference, in the cost of the piling or anything else whether we took 35 or 40. * * *

[fol. 921] I visited and carefully examined each one of these buildings. I did not take into consideration whether they were inadequate or not. I would not consider or correctly judge that. * * *

[fol. 922] I measured U. G. I. water-gas house No. 1, the length and the width. I went inside of it, outside of it. I did not go up on the roof. I don't remember going up on the roof of that building, or of the other U. G. I. No. 2 water-gas house. My list of items tells whether there was anything the matter with it or not. I found no indication of anything the matter with the roof. I could ascertain the condition of the roof without going up on it; I could see evidences of leaks by looking underneath. As long as it did not leak I thought it was in 100 per cent. condition. I went up on comparatively few buildings to make an examination of the roof. Many roofs can be seen from the upper floors of other buildings. You don't have to open a scuttle and climb out to see if the roof is all right, and many of those roofs are hipped and gabled and you can see the condition of the slate from the ground. As far as the roof functioning is concerned, I always examine it from the inside, because if it does not leak, it is functioning.

I found no items of repair to roofs of any of the buildings at the Nassau Works. Referring to the exhibit in the

first item under the Williamsburg Works, the monitor needed repairing and the gutter and down spout needed repairing. The monitor can be nothing else but the roof. [fol. 923] Under "T" boiler room, patched holes in galvanized iron roof. In this pumphouse B under the Metropolitan Works, the galvanized iron repairs, a portion of that might have referred to the roof. I will have to look at the photographs for that. That is only a small item. The purifier house at the Metropolitan Works has a $400 repair for the roof. Considerable evidence of leaks. Other repairs are filter press house, galvanized iron repairs. A portion of that may have been on the roof. I don't know about that, however, without looking it up. It is only a small item. That is a slate roof on boards. I found it in bad condition in several locations. It was not all gone. That does not wear out, on a slate roof, unless people walk on it. A slate roof is subject to breakage from freezing. Water gets under the edge and cracks it. They very seldom put on an entire new slate roof. They usually put on new slates where they are broken. That is the usual practice. That does not apply so much to shingles as it does to slate. Shingles are cheaper and it is easier to replace a whole new roof. It is very unusual to put on a whole new slate roof. I don't remember any in my experience. Coal shed under Equity Works shows a new roof. That is put down as a new roof, at a cost of $150. That is a corrugated galvanized iron roof and that is the roof of the Equity coal sheds. When I was there it was in a condition to be replaced. It was gone. The galvanized iron was corroded and rusted and gone, and required a new roof. In my ex- [fol. 924] perience, if it is kept painted, its life is very indefinite, but if it is left unpainted, the life is anywhere from six years to fourteen years, depending upon the dampness and moisture and coal gas and other atmospheric conditions. * * *

[fol. 925] We are not exactly going to sublet the excavating work. You hire the steam shovel at so much a day. Starting at the bottom, we pay laborers $6 per day for an eight-hour day, or 75 cents an hour, common labor. I got that price from my payrolls that I have every week. I knew that rate would prevail in Brooklyn. A person would be able to get labor at 62-1/3 cents per hour, common labor,

for classes of work where the labor is continuous. For all construction work you can hire and fire any hour. For steady work you can get labor for lower rates. The workmen would work at any plant or any place where they have continuous work throughout the year. These men are subject to hiring and firing at any hour, and this is the prevailing rate for laborers who are subject to that condition. This job that is going to last 18 months is not necessarily a permanent job for a common laborer. This gang might be up to 100 men at one time and it might be down to six or seven at another time. During that 18 months period you do not carry a hundred laborers. In all of this work you might have a hundred common laborers building these plants all the time. It might happen to coincide in such a way that you would have a hundred most of the time, but that is the prevailing rate that is paid by the building trades. You cannot get them any cheaper. A common laborer is a common laborer irrespeective of what he is doing, whether he is engaged in building buildings or digging [fol. 926] trenches or installing machinery, or anything of that kind, that is, assisting, carting dirt, or anything. His labor includes anything that would not cause a strike on the job, if he started to do something that was considered skilled or affected some union. * * *

[fol. 927] On page 51, the cast iron sewer there is 8-inch cast iron pipe, and there are 405 running feet of it and I took it at $1.93 a running foot. I do not know what the equivalent is or what the weight per foot is. I knew that it was going to cost us $1.93 per foot because I had the number of running feet, so I reduced the price of the pipe to the running foot price and used that. I don't know offhand how much it weighs per foot. I had it when I made my calculations, but I have not got my calculations here of equivalents that would give me the weight of that pipe. I imagine it is on the basis of around $52 to $56 per ton. I cannot give it to you any closer than that without getting the table. I think I took that price from the "Iron Age." I would not be sure. The "Iron Age" of June 1st or June 7th. I say that price, but I am quoting it from memory, so I would not be sure. * * *

[fol. 928] I did not make an investigation of the buildings to determine whether they were all adapted for the

use of the Company. I know whether they are of good substantial construction. I considered all of them, in general, very suitable, and very substantial. Taking the Metropolitan Plant, in general, I considered that that works was of good substantial material. The generator house and purifier house are both about the same value. Those two are the largest buildings. The new purifier house is of brick and steel construction. The new purifier house has no roof, as I remember it, it is an open purifier house, whereas the old purifier house has a steel roof and is entirely enclosed. I don't know the advantages of having one open and one closed. I imagine merely for the fact that it looks very new and it seems to more modern practice. [fol. 929] I was thinking of the Citizens when I spoke of that open top purifier house. That is the only one I know of, and it is new. It is newly constructed, and there is a new purifier house at Citizens, that is enlarged purifier house which is enclosed. I don't know just the best gas practice, whether to have one open or closed. The new purifier house at the Metropolitan Works is enclosed. That has a roof on it. The generator house at the Metropolitan is brick up to a height of about twelve to fifteen feet, and the rest of it is steel, covered with galvanized iron. I found many generator houses of this same type that were masonry up to a height above the grade, and the upper portion of the buildings steel and galvanized iron. I will say they were generally about the same construction of buildings as the Metropolitan Works. The cost of reproducing the Metropolitan Works is $705,788.71, and the cost of reproducing the Citizens Works is $894,431.83. That is practically $190,000 more to reconstruct the Citizens Works than to reconstruct the Metropolitan Works. I did not ascertain that the capaciiy of the works was the same, the Metropolitan and the Citizens Works. I do not know the capacity of either. I could not judge that from my work, as to whether they were not of the same capacity. I have no means of telling that. I have heard offhand that they are both, I think, ten million feet capacity.

Referring to the Nassau Works, in order to reproduce [fol. 930] that it is my estimate that the total is $914,062.66, costing $209,000 in round numbers more to reproduce that works than it does the Metropolitan Works. I did not

ascertain that the capacity of the Metropolitan Works exceeded that of the Nassau Works. There are about forty-five items on the Metropolitan Works, and on the Citizens there are only 34, so that the first reason for that would be that the items are somewhat larger. There are less items in the Nassau and more in the Metropolitan, the Metropolitan having forty-five or over, the Nassau fewer, thirty-four in number, so that the items would necessarily be larger in Nassau, both from the fact that there are fewer items and on account of it being more money. Taking the items separately, the engine, blower and generator house in the Nassau Works is two hundred and eight odd thousand dollars against the largest generator house in the Metropolitan, costing $135,000. One costs more than the other. I was explaining it from the point of items alone. It is a much larger building and much more massive building than the other,—this one item I have just spoken of, the generator house. The reason why one costs more than the other is merely the amount of material and labor necessary to put up the structures at one plant compared to putting them up in the other. The generator house at the Nassau Works is more massive than the generator house at the Metropolitan Works; which may not cover the same ground area. It may or may not cover the same or more ground area. The ground covered by generator house G at the Metropoli- [fol. 931] tan Works is 65 feet wide and 166 feet 7 inches long. The ground covered by generator house G of the Nassau Works, outside dimensions 68 feet 6 inches by 266 feet long. One is 65 by 166, and the other is 68 by 266. One generator house is about one hundred feet longer than the other one, and that, I think, accounts to a large extent, for this difference in cost of reproduction. The generator house of the Metropolitan Works is of the construction that I just described, being galvanized iron upper stories with the masonry running approximately 20 feet from the ground, whereas the generator house of the Nassau Works is brick sidewalls up to the eaves, and hasn't the galvanized iron construction for the upper portion of the sidewalls. The solid brick work would be more expensive than the steel and galvanized iron.

The main generator house in the Citizens Works has a value of $205,659.15. That building is 206 feet 10 inches

long by 65 feet 4 inches wide, and has a small addition on the south side, but it is very small. That is composed of steel and galvanized iron from the grade. That is practically the same as the Metropolitan generator house, with the exception that the Metropolitan has the masonry up around 20 feet, 20 feet above grade, and this has not; this is all galvanized iron and is a cheaper construction than the Metropolitan. The generator house of Citizens Works is 40 feet longer than the generator house of the Metropolitan and it is approximately the same in width. The cost of reproducing the generator house at the Citizens is $205,-[fol. 932] 659, and the cost of the generator house at the Metropolitan $135,155. The generator house at the Citizens is about forty feet longer, but it is of cheaper construction, being galvanized iron throughout, whereas the Metropolitan is of brick up to a certain distance, and then galvanized iron, and despite that, it cost $70,000 more to reconstruct the Citizens Generator house because it is 40 feet longer. As to whether the Citizens generator house is entirely galvanized iron, I was judging from the photograph. I did not go into the detailed description to refresh my memory on that. The Citizens Works generator house has the appearance on the outside of being galvanized iron, but as a matter of fact the walls are brick and steel framing and covered with corrugated iron sheets. In other words, there is brickwork underneath the galvanized iron. I think that that was a slightly more costly construction than the Metropolitan generator house, and that is why it cost $70,000 more to construct the 40 feet additional. That would be one of the reasons, the additional length and heavier construction, the other. I have never compared these in this way before, and I do not see any one particular item that is comparable; that is made up of many miscellaneous items, all of which in the Citizens Works average higher. They are larger buildings; the type of construction is very similar. The Citizens Works is a different arrangement of plant, different arrangement of buildings, all various sizes, and it is very difficult to compare one item with another. The Citizens plant should cost that addi-[fol. 933] tional amount to reproduce. There is an item of appurtenances on the Citizens Works; they are higher than those on the Metropolitan. By appurtenances I mean yard

work, pavement, concrete retaining walls, walks, roadways, fences and bulkheads and those items which are out of doors, other than building. They have considerably more appurtenances there than they have at the Metropolitan Works. They have fences at the other, but not near as large an amount. In the Citizens there is approximately $165,000 worth of appurtenances, whereas in the Metropolitan there is but $39,000 or $40,000 worth. They are both on the Gowanus Canal and right close to each other, both plants. They have a dock at the Metropolitan plant. It is not included in this estimate, whereas it is at the Citizens. This we assume to be a portion of the yard, as we were instructed to do. We were instructed to put in the bulkhead in the Citizens and we did not in the other. The other was, as I understand it—I would not be sure of this, because it is only hearsay, considered more or less property or real estate at the Citizens. In this case the bulkhead was really part of the equipment of the plant, for the reason that it had a wall which was back of the bulkhead which withheld the coal, and was so much a part of the plant it was not taken as part of the real estate or the ground value. I can conceive in my investigation only for the reasons I have stated why the dock in the Citizens plant or at the Citizens Works should be considered part of the plant, [fol. 934] while that at the Metropolitan should not be. The coal handling apparatus, being right at the dock, and the coal bin and retaining wall, a large retaining wall running parallel to the bulkhead just back of the edge, which acts as a coal bin, and its support is so much an integral part of the dock. All I really know is that I was not asked to appraise the dock of the Metropolitan, and that I was asked to appraise that at the Citizens.

Referring to the Nassau Works over Metropolitan there is a difference there of about $209,000 in the cost of reproducing the two plants. The purifier house is approximately $22,000 more than the purifier house of the Metropolitan Works, and that accounts for a portion of it. The two purifier buildings are approximately the same length, about 150 feet long, and they vary in dimensions, in the width dimensions, by 36 feet. In other words, the Nassau purifier house is 36 feet broader. They are both brick, brick outside walls and slate roof. I am comparing purifier house

in Group C of the Nassau Works with the purifier house B at the Metropolitan. There is $22,000 difference in the cost, and that is largely accounted for because it is a wider building. The other items at the Nassau Works increasing the cost of reproducing that plant about $209,000 over and above the cost of reproducing the Metropolitan Works plant would be accounted for; one item where the Williamson generator house in the Nassau Works has no building to compare with it in the Metropolitan Works. That is a [fol. 935] $63,000 building and I don't think there is any other building to compare with that. In other words, the Williamson generator house is an addition to the generator house G which I have compared. At the Metropolitan Works they have one generator house while at the Nassau Works they have two. The size of those generator houses at the Nassau is much more than the size of the generator house at the Metropolitan. One of them is larger than the other anyway, and besides that they have another $63,000 one. That would account for $63,000 worth. It is hard to match up these buildings, with a miscellaneous list of the plant.

I examined the works office and the meter house at the Metropolitan plant from cellar to garret. That is Building C on the map. It is a square shape, small square brick office building. It has got a hip roof. The entrance is on the street but you go in through the checker's office. They have no station meters in that building. That is an office building. They have got a general bookkeeper's office on the first floor. The stairs are on the righthand side as you go up. The superintendent's office I think and other offices are on the second floor. They have got a calorimeter working on the main floor. The usual type of office building in a gas plant—men coming in and getting their pay. It costs, in my estimate, $18,572.65 to reproduce that works office at the Citizens Works. I examined that works office carefully. [fol. 936] It is not very different from the Metropolitan; it is about the same character of building, with the same number of floors, and answers the same purpose. Instead of being separate the way this is—well, this adjoins another buiding in back. That really adjoins the meter house and other buildings in that group, and that costs to reproduce approximately $5,000 more—$23,258.54.

Referring to the works office at the Fulton Works, I valued that building at $27,956.82, as compared with the others, and its uses. That is about $9,000 more than the Metropolitan. It is different from the Metropolitan building in that it has the meter room in the rear. The front building is about the same as the Metropolitan building; I mean it is a square two-story brick building and this has a meter room in the rear and adjoins it. You can walk right through from this main building to the meter room. The other two might have the meter room attached to them, the same as this, but not part of it, not included in the estimate.

Referring to the works office and the meter house of the Williamsburg Works, that was formerly the toluol building. It is the same general use as the works office at the other plant. My memory is that I saw some new meters stored in there, but I won't be quite sure about that. It is shown as B on Plaintiff's Exhibit No. 171-a. It is I on our estimate. That is devoted to the same general purposes and the same use as the works office and the meter house at the other plants, but much larger and it has one more story. [fol. 937] It cost $55,000 to reproduce a building of that kind.

The works office and the meter house at the Nassau Works, comparing it with the other works offices and meter houses at the other plants, is considerably larger than either the Fulton or the Citizens Works. It is a corner building with a mansard roof and has with it a meter room section. That is devoted to the same general purposes as the offices and the meter room is connected with it, and it is a three-story brick building. It cost $74,302.15 to reproduce that. The cost of the works offices and the meter houses run from $27,000 at the Fulton to $74,000 at the Nassau. I don't think it is costly to reconstruct the Nassau Works office. It is more costly compared with the other buildings because it is a larger building. The meter portion is a three-story brick and the other portions are three-story brick with a mansard slate roof. There are three sections, any one of which is about the size of the smallest office buildings in the other plants. There is an expensive stairway there; stairs three feet one inch wide, mahogany handrail, 45 treads. You have to have the 45 treads to get up. These are the usual size steps. There is nothing

particular about the stairs. The stairs at the Metropolitan are broader than that, three feet one, I am very sure. As to how much the stairs cost in the works offices of the Metropolitan and the Williamsburg, the two largest plants, compared with those of the Nassau, there are no separate [fol. 938] stairs listed under Williamsburg. I could not find any stairs listed, but they are in "Ornamental iron," because those are iron stairs and on the outside of the building. They are under "Ornamental iron." The Metropolitan cost $300, The Nassau $1,015, three times as much, but there are twice as many treads. I wouldn't think it an expensive stairway, compared with the Williamsburg. There is more of it. There are 22 treads on the Metropolitan. I am sure they have an iron stairway on the outside in the Williamsburg. I have been up and down it. At the Nassau office, it looks as though it was constructed for the purpose, according to my observation. It looks like an office building that you would put on the corner of a lot. It is not cut up into small rooms, the rooms are quite large, upstairs especially. It has twenty-four doors. The exhibit shows the number of doors. In the office and meter room of the Nassau Works there are 41 doors, while in the office and meter room of the Williamsburg Works there are 23. The reason for that is the Nassau Works office building is practically in three parts but making a whole building shown here as the office and meter room, practically in three sections, whereas if you take the 3-story building of the office and meter building at the Williamsburg Works, you come right in from the outside and you could practically have no doors other than those in the office partitions because it is practically open space except for toilets and small hallways, in the Williams- [fol. 939] burg office. In the Nassau Works there is the ordinary front door and vestibule door as you go in, and, as I say, as you pass from that building into the next meter room and on to the third room. There are naturally connecting doors between and there is an interior stairway that has doors leading to the floors above, and that is in three sections, whereas here you have a building in one section, and therefore contains no dividing brick partition such as you have in the other, which would very easily

account for the number of doors. It is interior and exterior for the reason that the one is one building and the other is really a building in three sections. I am of the opinion that the Nassau building was originally constructed for the purposes for which it is now used, and the one at the Williamsburg Works was not. I do not think that if they had constructed that for the purposes for which it is now being used it would also have had 41 doors in it. I do not think it is comparable. I think may be the old still house makes just exactly as good an office as the other, and some people may think the Nassau office made a better one than this old still building. It is purely a matter of opinion.

Referring to the building at 130 Atlantic Avenue, from the type of construction, I could not say what that building was originally intended for. It may have been built by the gas company for a gas works, but I don't know. There was nothing particularly peculiar about the building. It is a brownstone front with a cellar and a sub-cellar. [fol. 940] There are two cellars, one is about 9 feet 6 inches below the curb and the other is about 7 feet 6 inches below that, two cellars under the building. Including the ground floor it is four stories, brownstone front with iron fire escape on the front, outside dimensions are 25 feet 6 inches by 80 feet deep. I went through the building and examined it very carefully. I don't know what it was being used for. There is some material, lamps and various things stored there. I saw some material that was stored there, there was evidence of the top floor being used as a photometer room, or darkroom. I did not inquire into its use. The only part I saw which was used for storage purposes, I think it was on the first floor, and there might have been some material on the second, but I would not be sure. On quite a portion of the first floor I saw lamps and material like lamps. I did not make any particular note of them, but there was material stored on the first floor, and my memory is not very good on the second floor, I don't know whether I saw anything there or not. There were some loose packages, lamp shades, on the first floor. I don't think there was anybody there when I was there. I got the keys and went in the building, and nobody was around there that I saw. It had the appearance as if some appliances were

stored on the first floor. A considerable space, it may have been fifty per cent., it may have been more or less than that, was occupied on the first floor by material storage. I do not recall whether I saw anything on the second floor or not. It may have been empty, and it may have had some material there that did not attract my attention. My recol- [fol. 941] lection is there was nothing on the third floor. The fourth floor had been used for a photometer room and there were considerable partitions and shelving and miscellaneous materials around. It had a hand elevator in it. There is an areaway because there is a railing there in front. This wall that supports the sidewalk goes out beyond the building line. My recollection of the elevator is that it only goes to the first floor,—the ground floor. There is an elevator pit below it. They would build buildings nowadays with an areaway in front like that, with a fence around it, where they have steps or a stoop. If these steps or stoops did not exist, then they would put some part of a grating and an iron door to open, but as this sidewalk is occupied by those two steps, they have the areaway to get the additional air and light. I went all the way down in the cellar. I think I lit a gas jet down there. I remember lighting gas jets. There wasn't very much light. I know I lit one in the sub-cellar, but I would not be sure about that. My recollection is that there is a light burning there. I don't remember seeing any material in the sub-cellar. I could not tell how old the building was, not by any means, from the appearance of the building. I suppose the factory laws would compel them to have a fire escape on it, if it was used as a workshop. That is my best opinion. I think it is quite usual now to construct buildings of that general character, that is brownstone, and then to have a hand elevator in them and areaways in front, although brownstone [fol. 942] is rather out of style than out of use, because they are not building as many brownstones. I could not tell from the fact that it was constructed of brownstone its approximate age; there was a great deal of brownstone constructed in New York City and Brooklyn in the years from 1850 to 1890, and there is considerable going on at the present time, brownstone construction. They are constructing a lot of brownstone buildings now. The Brooklyn Eagle addition over here is brownstone trim; The Russell Hall

up at Teachers' College, 120th Street and Amsterdam Avenue is brownstone; the Allerton Fraternity House at 38th Street and Madison Avenue is brownstone. Those are the only ones I can think of at the present time that are being constructed of brownstone. It shows signs of coming back. I do not know to what extent it will come back, and that is just an indication. These are very modern buildings, and are built very fine architecturally, and they are brownstone and are new. There are quarries at several locations, the Portland quarry in Connecticut and Long Meadow quarries in Massachusetts. The Russell Hall I speak of is a building that is a part of Teachers' College, which is a portion of Columbia University. Teachers' College has been up a long while, but Russell Hall I think is just about completed. Teachers' College comprises practically one group of buildings. Not all brownstone, but all brownstone trim.

I prepared this Plaintiff's Exhibit No. 172 to show what [fol. 943] repairs in my opinion would be necessary to make in order to make the property, the buildings, as good as new for every purpose. I did not figure or think of sale when I listed up these items. I have testified that I know nothing about the sale values of buildings. My exhibit is not made up with the idea of making the buildings as good as new for the purpose of sale; that idea was not considered. Other purposes they would be as good as new for are utility, life, wear and tear, protection against the elements, and in general a building which is equal to new. That is all. By making these repairs which I have outlined the building will be as good as new for the use of the company and for these other items that I have enumerated. I think by making those repairs the building would be as good as new in so far as the utility to the company is concerned. I have already testified they are in very good operating condition, in very good condition of repair and maintenance. Of course, these are small items. I don't think they could use the buildings to any greater degree of utility if the repairs were made, other than broken lights of glass admit cold air and wet, and leaking roofs of course tend to wet things in the building and destroy the plaster. We have not any leaky roofs in any of the buildings that the men would work in, to any great extent. The company could not get a greater use than they are getting to day out of

the buildings if they made the repairs suggested by me—other than, as I said, exposure due to openings. I can conceive of such a time in the use of properties when lack of [fol. 944] repairs such as I have given in my exhibit here the usability and utility of the building is less than 100 per cent. Take an average generator house throughout all the works, I would say that when the roof becomes in such a condition that it admits sufficient wet, rain, cold and snow so as to render it uncomfortable for the men working around the generators; also when the floors, the concrete floors in the basement, where they are unloading the generators and cleaning the generators, become in such a condition that it would not only be uncomfortable for them to wheel their cars, but dangerous from the point of a liability to trip over holes by reason of roughness in the concrete. The same thing would apply to the siding, which if allowed to deteriorate, would allow the wind to blow in, and the moisture and the cold. It is purely a housing proposition as far as the exterior is concerned, and a matter of safety and economy to have the floors in good condition. It would depend a great deal uopn the temperament of the particular employee. Many men would kick if they have a drop of rain; others do not kick if there is a bucket of water thrown on them. So it depends entirely upon the temperament. The repairs necessary have not affected the morale to any appreciable extent, and I would consider the building at all times when I visited them in 100 per cent. usability. I did not observe the morale of the men as I went through—I observed things that might affect their morale. I am afraid you would have to be constantly on the work and a [fol. 945] superintendent or timekeeper of the factory to discover the morale of working men or a group of working men. You would have to work with them. The buildings would not necessarily have to be in a state of considerable disrepair before the efficiency of the men would be affected. A little paint does a great deal to cheer them up. Very often it depends on the color of the paint. I would think the efficiency of the men is affected to a greater extent by labor-saving devices than by the fact that the plant is in a state of disrepair.

[fol. 946] The Master: You are expecting, as I imagine, to have the amount of the second exhibit deducted from the

amount of the first exhibit in order that we may thus know the present value of the buildings in question? That is what I understand to be the relevancy of your evidence. That is substantially the same thing as proving the cost of reproduction new, and then asking the amount of depreciation, deducting that and getting the same answer. I don't see any difference.

Mr. J. A. Dykman: From the latter statement, sir, I have no dissent at all.

The Master: If that is not the purpose of this exhibit, why was it ever introduced?

Mr. J. A. Dykman: The Master's last statement is exactly its purpose, exactly its purpose. I do expect to have it deducted.

The Master: That is what I supposed, and as I say, that is your method; as I sense this evidence, it is the method you have adopted of establishing present value, to make an allowance for the element of depreciation. That is the form in which you put it into evidence, but you dissented from that; you said you did not think I properly sensed the force of the evidence, and I don't know what else to do with the two exhibits.

Mr. J. A. Dykman: I only dissented from the word "depreciation," because it seems to me that the very small outlay in the opinion of this witness to put these buildings in the same condition as if new is hardly to be dignified by that long name. It is simply a matter of terminology, sir.

[fol. 947] The Master: Is it not essential that I shall find on the evidence the cost of reproduction new and find also an amount which represents depreciation, be it large or small, in arriving at the present value of the buildings, or their value as of June 1, 1923? Isn't that the purpose of this evidence?

The Witness: I am not prepared to state what in my opinion is the amount of depreciation that these buildings have suffered since their erection. This estimate that I have compiled to do these items on the various buildings is the only estimate I have. I am not prepared to express an opinion.

Mr. J. A. Dykman: I don't think the witness fully understood what the Master meant by the last question. It is our contention, first, that these buildings, being in first-

class operating condition, maintained by replacements and repairs, have not depreciated in the sense that that term is often used where a percentage is arbitrarily placed upon the value of a building.

The Master: By that you mean to say that what is known as straight-line depreciation is not applicable to these buildings?

Mr. J. A. Dykman: Exactly, sir. Now, there is of course a lessening of value, I suppose, by reason of certain things which must be done to a building at a certain time, taking it as of that time. This witness testifies that the expenditures shown on his exhibit will put the building in condition as if new. Now, I don't think we can or should quarrel with the calling of that depreciation, and that is the pur- [fol. 948] pose of its introduction, in order that the Master, if he wishes, and thinks proper, may deduct that amount from the other figure. I think the witness would say to you that that figure—I think the witness meant to say to you that that figure represents his opinion of depreciation in that sense, and I think that what he means, when he says he is not prepared to give his opinion upon depreciation, is upon the other branch or the other theory of depreciation.

The Master: Well, of course, I cannot exchange views with counsel as to what a witness means, but what has now been said in the presence of the witness could operate by way of education.

Mr. J. A. Dykman: I am not going to ask him any more questions, sir.

The Master: I am quite willing in the presence of the witness to state that no more intelligent witness has been on this stand, no one better able to deal with the questions concerning matters that have formed his life work and education. He has shown perfect familiarity with everything concerning which he has testified, and, when he states that he has no means of forming an opinion as to the amount of depreciation which these buildings have suffered and at the same time puts in evidence a schedule showing what in his opinion it would be necessary to spend to make these buildings as good as new, I think we must accept the witness's statement that the exhibit does not represent his idea of the amount of depreciation which these buildings have suffered.

[fol. 949] Witness: I would like to qualify that answer without referring to the conversation of counsel. When I mention the term "depreciation," it always implies and has always implied to my mind a percentage, something that can be applied on the total value of a property to show its shrinkage in value; either applied as one percentage over a term of years or so much per cent. per year, somewhat like the blank that is in the United States Income Tax Report, and when you asked me about depreciation, I was trying to form in my mind some sort of a percentage based on this $20,000 which I have found for repairs, renewals and replacements on the buildings. I am prepared to state, what in my opinion is the amount of depreciation which these buildings have suffered since their erection. The amount as set forth in my detailed list of changes in my opinion is the depreciation that these buildings have suffered. I referred to Exhibit 172. Depreciation I consider the amount necessary to expend upon a building to put — in a condition equal to new, for any purposes—not necessarily for the purpose of sale. I did not judge these buildings for sales value. I know nothing about sales value. Depreciation is a sum necessary to put the buildings in a condition good as new, for any purpose, excluding sales.

[fol. 950] Brooklyn, N. Y., March 3, 1924.

HENRY R. BURT

Cross:

I meant by the word "utility" from a housing standpoint that would properly house and serve either apparatus or persons as a house. I meant from the point of life that such items of renewal and repair as I made note of would prevent progressive deterioration, in that each item repaired would prevent deterioration of other portions in the building. That it would prolong its life. It would prevent progressive deterioration. If these repairs are not made, I would say that there is a process of deterioration at work that is progressive and has been since the building was erected. What I mean by "progressive manner" is one deterioration leading to another in a different kind of ma-

terial, such as if the roof leaks, the very fact of the roof being leaky is not in itself—the roof itself, for instance, has deteriorated, but if that roof is allowed to remain leaky, it produces deterioration in the rafters under the roof. That is what I mean by progressive deterioration, and these repairs that I have spoken of would prevent progressive deterioration for the future. As to the past there has been progressive deterioration, of certain parts. It was my effort to make note of all the progressive deterioration that had occurred up to June 1, 1923. These replacements and [fol. 951] repairs that I have set forth in this exhibit would tend to arrest the progressive deterioration and would tend to replace the different objects with new objects. I attempted to do that when I made this list. I don't claim this list is a superhuman list, but it is what I conscientiously observed as I went through the buildings. In my opinion if the things mentioned in this exhibit No. 172 were done on June 1, 1923, everything that had occurred by way of progressive deterioration prior to June 1, 1923, would have been supplanted by replacements equal to new and in addition to that, further progressive deterioration would be arrested. When I speak of deterioration along the line I have been, I have reference to wear and tear and also that due to the elements. My definition of depreciation would confine itself to the condition of the building, not referred to as obsolescence or to its neighborhood or to its environments. I have taken into consideration the purpose for which it is used, that it is adequate, in that for the uses of the gas company as a building, as a house. I do not know whether it is adequate or inadequate for the company as a business proposition and I don't know whether it is constructed so that it is adequate to install heavier machinery than is now being used in it. I don't know whether it is properly constructed so they could utilize waste heat boilers or Cox stokers or charging machines. In my [fol. 952] opinion depreciation is a difference in value. It is expressed in dollars and cents. Depreciation is an amount different from reproduction value—with some other value. I don't know anything about sales value and I don't know anything about the value of a building to a utility, other than as I have expressed from the fact that it is a housing, protection against the elements. Depreciation in my viewpoint is not the expired and useful life of any of

the buildings. In my opinion there is no difference between the depreciation and the items as shown on Plaintiff's Exhibit No. 172. It is my opinion that if these repairs or replacements mentioned in Plaintiff's Exhibit No. 172 had, as a matter of fact been installed on June 1, 1923, there would have been no depreciation in the building. My theory of depreciation is the sum necessary to expend to make the current repairs which have been omitted. When I said in answer to the Master's question that a depreciation always implied to my mind a percentage, something that can be applied on the total value of the property to show its shrinkage in value, either applied as one percentage over a term of years or so much per cent. per year. That remark was made in explanation as to why I made a previous answer, and describing my definition or mental reflex on the word "depreciation" as first given to me by the Mas-
[fol. 953] ter's question. I did not understand what he referred to by depreciation and I thought at that time he intended that to refer to straight line depreciation or some sort of depreciation that could be represented by a percentage. When I say "When I mention the term depreciation, it always implies and has always implied to my mind a percentage, and that this percentage—either a percentage for one year or a percentage which can be spread over a term of years" I do not agree with that theory. I disagree with that theory because I think that the value of depreciation in a building cannot be applied in an empirical percentage or in a fixed annual amount over a period of years or over a stated period, because it is too broad. It is an assumption which many people make which in my opinion is an error. It is not because the depreciation varies each year that it cannot be applied as a straight figure but because it takes the premise that a building is constantly deteriorating and going down hill, although this percentage applies no particular cause for that. My opinion is that the life of a building is indefinite. My definition of depreciation does not include inadequacy or obsolescence or change of character of the neighborhood. The theory of the United States Government in allowing 1½ per cent. depreciation on brick buildings annually, is not in accordance with my idea, for income tax purposes. I have never ascertained and have
[fol. 954] no knowledge concerning the investigation which

was conducted by the government officials in arriving at their theory. I know nothing upon which it is based. In this particular case I made no study or attempt to determine the decreased value or worth, if any, of any of the buildings due to inadequacy or approaching inadequacy, or any element which would lead to its disuse or abandonment by the company. I do not think a building has a useful life, depending upon the extent and character of its use and the demands of the owner and the extent and character of its maintenance. I recognize that the inadequacy or obsolescence or change in the character of the neighborhood may have a disastrous effect and may have a very favorable effect upon the value of a building. The mere fact that the building is old or new does not affect the question of its inadequacy. A new building can become inadequate depending upon the demands of the company, just as well as an old building. In order to familiarize myself with that subject I would have to know in great detail the demands of the company, the growth of its consumption and the contemplated plans of the company, and which I do not know. All those elements which would lead to the inadequacy or obsolescence I did not consider in my estimate of depreciation. As to whether a group of old buildings would need repairs [fol. 955] to a greater extent than a group of new buildings, it would depend on what you call a new building. After a period from four to eight years, the new building needs practically the same number of repairs as an old building. But when it is brand new, just built, I would say it does not need as many continuous repairs as an old building. There would be an indefinite time from four to eight or ten years, when the running repairs would not be as great as in an older building. When we have these buildings repaired by making the repairs set forth in Plaintiff's Exhibit No. 172, they would still be buildings made of old material, and after the repairs were made it would not affect the question of their inadequacy or obsolescence in any way. That is, it would not restore any decrease in value they have lost by reason of those elements. I don't know whether the underwriters discriminate between a building built for a long while and a new one, other than with reference to its modern fire protection, or some outside element. I don't know whether the underwriters make a difference between an old building and a new building. When

my attention the other day was called to the fact that the Metropolitan Works and buildings at the Metropolitan Works cost $194,000 less than the Citizens and about $214,000 less than the Nassau and when I was at work taking the valuations or taking the items, I did not learn that the company had been able or is able to make gas cheaper, at less cost, in the Metropolitan Plant than in the other two.

The No. 1 U. G. I. house at the Nassau plant which is [fol. 956] building G, has a peaked roof, of slate. It is not a new slate roof. The roof I looked at was in good condition. I found no repairs necessary on the roof. I have not since learned that they put a new slate roof on there. The No. 2 U. G. I. house, I found that slate roof in a good state of repair. I did not know that they have made considerable repairs to the roof since I looked at it.

At the generator house with the Williamson generating machines, I found the roof there to be in good condition. I have not since learned that they have made necessary repairs to that roof. I did not know they were necessary. At the old purifier house I made no note of my repairs necessary on that roof, and since that I have not learned that it was necessary to repair that roof.

The building at 1116-1124 Fulton Street is in excellent condition. I have not since learned that they have spent about $7,000 in making repairs and in painting it since I was there. That is a very modern building and I went all the way through it, and the garage adjoining it, and they are in excellen condition.

At the Equity Works I found a repair necessary there to one roof. They were engaged in replacing the roof of the Equity when I was there and I did not make a note here to the extent to which the roof should be repaired, for the reason that there were men engaged there, three or four men on the roof, and during two visits that I made they had completed a considerable portion of the roof. That is a large L building. It is a generator house and a con- [fol. 957] tinuous gas making building. I am not aware that in September of 1923, they authorized an expenditure of about $3,400 for further repairs. I know they were repairing the roof when I was there and I did not make a note of the slate work that they were repairing, because it was in a condition of being repaired. At the Williams-

burgh Works, as far as I could determine there were no repairs necessary to the coal hopper or the coal trestle. I made no note of any repairs on those two items, and I have not learned since then that they have expended money for repairs to the coal hopper or the coal trestle. Other than that I might have observed men working at this location. Naturally I encountered them making repairs on my visits to these plants. As far as I could see neither one of those things needed repair at that time. I find that that trestle also existed in 1919. I do not know that they have expended money since that.

The general office building at 176 Remsen Street is in excellent condition and needed very slight repairs. The ter-azza floor was the principal item that I noted, and there was a very small crack in the penthouse, outside of the blueprint room, the extent of the repairs in my opinion amount to $380. It is very likely that they have painted various officers, hall and stairways in that building at an estimated cost of $7,000. I did not notice that it needed painting at the time. I included in my field overhead, 7.53 per cent; that includes salaries of superintendents, salaries of assistant superintendents, timekeepers, watchmen, telephone, shanties, office shanties, storage shanties, plant and equipment. By superintendents, I mean my own superintend- [fol. 958] ence, liability insurance, cleaning items, such as cleaning glass, sweeping out, public insurance. It is arrived at just as I testified before, that each plant is considered as a unit, and I have worked out the overhead for each particular location, and from that I derived a different percentage on each work. Sometimes on the smaller plants it will run over 8 or 9 per cent, on the larger plants it may run under this average of 7 per cent, and this average of 7.53 per cent represents the weighted average of the field overhead, and it also included the field administration necessary for the construction of the foundations for the machinery, which we assumed as general contractors or as sub-contractors we would have. In addition to the buildings we were going to excavate for the foundations of this various equipment, we assumed that that would come under our work, but is not included in this inventory, but in calculating this 7.53 per cent it was assumed that that work would fall under our administra-

tion. The excavation and the foundations for the buildings proper are included in my valuation. The excavation and foundations for the machinery, the amount of which I know and I have obtained from Col. Miller, is used in obtaining this field overhead, otherwise our per cent would be larger. Col. Miller did not tell me the amount of excavation; he merely told me the amount of money it would cost to install the foundations and excavation for the machinery. He just gave me the amount of money so that I could use that in fixing my per cent. For instance, on the Williamsburg Works he had a total foundation for the machinery of $433,898.64; on the Citizens, the amount of [fol. 959] foundations machinery and so forth, $320,080.87; Metropolitan $279,969.68. I am giving exact figures whether the exact amount was used or not, but it was sufficiently accurate for me to determine the percentage of overhead. I am not sure that he used these, you understand. These are the exact figures he gave me.

12th Street holder	$166,952 28
Fulton Works	228,285 22
Third Avenue holder	94,675 26
Nassau Works	209,270 77
Equity Works	89,133 11
Front Street holder	199,352 49
Plymouth holder	142,089 01
Rutledge Street holder	150,952 49
Skillman Peoples Station	55,163 30
Skillman Nassau	47,936 41
Wythe Avenue holder	192,587 94
Scholes Street	29,195 26
Belmont holder	42,529 69
Keap Street	36,661 19
Union Holder	17,634 78
Nassau Branch and garage	Nothing

In giving those figures I would like to qualify it by saying that those are costs exclusive of any profit percentage or any overhead. That is what the Colonel told me. I do not know the aggregate of those. I have no tabulations. These quantities or the sum of these amounts of money were used by us to determine the 7.53 per cent, and Col. Miller has applied on his reproduction cost the 7.53 per

cent on the items. I have not included it too. It was only used to calculate this per cent. If I had not used these sums in ascertaining our percentage, the percentage would have been higher than it is as a result of using them. I have given my estimate of reproduction value of these buildings and one of the factors used is approximately 7½ per cent as an overhead item. I have only included the 7½ per cent on the work that we would do as sub- con- [fol. 960] tractors building these buildings. The amounts that I have given Mr. Cummings represent the foundations to be done by another contractor not included in any way in this cost, but I have used these amounts for the purpose of determining this 7.53 per cent. It was necessary to use it, for the reason that otherwise it would be larger. I haven't included in my estimate of cost of reproduction of the buildings an item of overhead upon the foundations or equipment. In estimating what that item should be, I have taken into consideration the probable fact that I would be engaged in doing some work in addition to the direction of the buildings, thus spreading our overhead over a larger field. I arrived at that 7.53 per cent, approximately by taking as the subject matter not only the buildings but these other things that probably when erecting the buildings, I would be called upon to install. It was not necessarily my idea that Col. Miller would have me make these excavations and prepare these foundations, but my field force would be adequate to take care of that portion of the work if he should sub-let it to us, so that the entire burden of my field overhead would not be borne by the buildings. In Col. Miller's estimate there is field overhead on these items which he has given me. He has adopted the same overhead that I have. I have testified that buildings in my opinion have an indefinite life and I think that would also apply to structures like coal bins and hoppers and the like. Buildings and structures are made up of different kinds of materials. Some of the parts of a building have a definite life, and some of the parts have an in- [fol. 961] definite life. Assuming that those buildings and structures had been kept in repair so that they would be equal to new, I would have given them the full reproduction cost up to the moment they were removed and even though I knew any one of the structures which I have

enumerated in Exhibit 171 was to be removed on June 5th, I would in my estimate as of June 1st, 1923, have given it the full reproduction cost. In other words, up to the very moment a piece of property is retired or abandoned, in my opinion it is worth its reproduction cost provided that it was kept in a condition equal to new. There are a great many structures where there is practically no deterioration going on, such as I have outlined in this 176 Remsen Street. There is a modern building and the amount of deterioration going on there is infinitesimal, you cannot calculate it. There is some wear and tear exactly, and that is a comparatively new building too. For example, a roof starts to leak, assuming a tin roof, the tin has been wearing away, getting thinner at the point where it afterwards leaks through. If the roof does not leak it is functioning 100 per cent. My estimate of the cost to reproduce the purifier house A, Williamsburg Works, as of June 1st, is $106,762.69. The first item on page 2 Exhibit 172, refers to that same building so that by patching a metal louvre over the door at an expenditure of $5 the existing building would be as good as new. Before such an expenditure would be made or such repair made, the building would not have been as good as new because it would not be in condition equal to new. That is a new building, built since 1919. That was in the process of being constructed in 1919 when I visited it before. The fact that that metal louvre over the [fol. 962] door was not patched, affected the utility of the building because it was bent, it naturally would not ventilate as well as it would if it was in perfect condition, and this $5 would put it in perfect condition. I don't know if that has been actually repaired. I have not made any investigation since June 1st to see whether the repairs which I have set forth as necessary on Plaintiff's Exhibit No. 172 have been made. Take the first item there on page 1 of Plaintiff's Exhibit 172, the office and meter building at the Williamsburg Works. You could reproduce all the leaders on the building which I have noted here as a down spout; the down spout as noted here on page 1 of Plaintiff's Exhibit 172 is designated about half way down the page on Vol. A. of Plaintiff's Exhibit 172 as leaders galvanized iron, 4 inch 270 linear feet at 50 cents a running foot or $135. From these notes I would say that

there was no new gutter and down spout; I think that refers to straightening some damages and I obtained that information from looking at the gutter and down spout and the same with regard to all the items on Plaintiff's Exhibit No. 172. I got my information as to their condition from looking at them and feeling them and running a knife into the timbers; from physical touch and observation.

The cost to repair and maintain an old building is generally considerably greater than it would cost to keep and repair a new building, in accordance with my other answer in regard to a new building that was from four to eight or ten years old. * * *

[fol. 963] Sub-contractors' profit in the case of the electrician is 10 per cent. In the case of the plumbing it is 15 per cent. In the case of the heating it is 15 per cent. Then to those profits are to be also added fuel overhead of 7.53 and 10 per cent representing what is called the building contractor's profit. I don't know about a general contractor's profit. Besides those items of plumbing, heating and electric wiring, we would sublet on the tiling and the slate partition work. That is about down the center of the page. We would sublet the gutters and [fol. 964] leaders, and we might sublet the roofing work. In this estimate, I used the unit prices that would cover subletting it to a sub-contractor. In other words, I can get a leader installed for the unit prices shown here, by a sub-contractor. I have not shown the sub-contractor's profits separately. It is included in the unit prices. I know I can have a gutter installed of this particular type, from a sheet-metal man, for that unit price shown, and that includes his profit. I did not testify in answer to one of Mr. Cummings' questions, that the very first item of excavation I assumed was to be sublet. I qualified that by saying we would rent a steam shovel and we would probably do it ourselves, if you will refer to the testimony. In all cases in which I have included a labor cost in my total cost, I have not added this 30 per cent overhead. I have added it in 30 per cent overhead, when I testified that I added 30 per cent to the labor cost. That was only with reference to one particular sewer. We don't add 30 per cent to our labor costs. That was a plumber's labor overhead; that had nothing to do with our construction work. That 30

per cent overhead is added to the labor for installing the heating, amounting to $1,532. It is less for the electric wiring, it is 15 per cent. Plumbing and heating is 30 per cent of the labor. I have used that figure all through this exhibit for those items of plumbing and heating, 30 per cent on the labor and 15 per cent on the labor of the electric installation. We would have to have the structural steel work on page 4 fabricated, and have a sub-contractor who would fabricate this work, because we have no fabricating shop, but we, as the sub-contractor, have figured on erecting this steel ourselves. * * *

[fol. 965] With reference to page 117, Volume 1, of this Plaintiff's Exhibit 171, the Citizens Works, Meter House; for brick work, common, 254,947. There is an error in the decimal point, in multiplying by the cubic feet of brick work for determining the amount of common brick in the basement. That is, this 254,947 should be 164,693. That would change my total cost from $13,632.62 to $8,160.54. This error was called to my attention by one of the Commission's engineers before I went on the stand. I have prepared corrected sheets and if there is no objection we will substitute the original sheets as corrected in both counsels' and the Master's copies. So that the result of this substitution will correct Plaintiff's Exhibit No. 171-a pages 117 and 118, to the figure upon which the engineer for the Public Service Commission and I now agree as to quantity. It also corrects the summary. It will substitute a new sheet for pages 117 and 118, referring to the number at the bottom of the sheet, and will also change the general summary on the 1st page of the exhibit, Volume A. I have prepared a new general summary also, so that the net result of it is four pages substituted. I have numbered these new pages with the corresponding numbers as they appear on the pages which are now in Plaintiff's Exhibit No. 171. I should correct that. There are five sheets, because the summary of the Citizens Works consist of two sheets, 115 and 116. Referring to page 117 there is no correction there. Referring to page 117 of Plaintiff's [fol. 966] Exhibit No. 171 the item slab forms, 3,279 square feet; we have also discussed this with the Public Service engineers, and differ very slightly in opinion as to how this

should be taken off. We have taken the complete floor area throughout in calculating these forms for the slabs, whereas they maintain that on account of the meters standing on this floor, that these saddles that hold up the meters are really supported on a portion of this floor and should be included in the foundation for apparatus. I do not share their view, but I have made an estimate here on what it amounts to if those are omitted. The engineer would compute the foundations as part of the apparatus and the amount I have for that is $263 but that is my memory of it. Deducting the space for these foundations, the floor as it is now is a 41 foot floor by 79 feet, making 3,278 square feet. I gave the gross area of the floor and the net area would be approximately 760 square feet less, if you took the entire space under each meter. There are four station meters that occupy a space of about 12 feet by 15 feet 8, and in my opinion it should not be omitted, for the reason that these meters fit on saddles, and it is absolutely necessary to finish the finished floors under them, because under these meters, they are barrel shaped. It is all open and you would have to have these floors as part of your building construction. So I would not omit it. We did, however, discuss it with the engineer. I think the difference there is 760 square feet. We have not included the supports for the meters. This refers to the form work only that goes under the entire floor. We have used a gross area for calculating these forms, of the entire floor, and it [fol. 967] was the opinion of the Public Service Engineers they should be omitted. It is simply a matter of system accounting for estimating when they are omitted, and if you took out every small opening in cases as these it would greatly affect our unit price. The unit price that I used here I found by experience is based upon not omitting all the openings and holes, but taking the general area. If I did omit them our unit price would be greater but the quantities would be less, so that I have computed the total superficial floor area. In this particular case, but wherever I have computed the number of feet necessary for our slaf forms I have not the entire surface floor. I would not say that applied to the whole plant. This is very different and quite peculiar, for the reason that there is very little

apparatus that sits like a station meter on saddles, the saddles being just a portion that runs up under it, to hold this barrel-shaped meter. It is not like a foundation under an exhauster or a piece of machinery, where you have a big concrete slab. Those we omit. But this is such a small amount compared to the amount that you take out for a large piece of machinery. Wherever I have estimated the number of feet for slab forms in meter houses I have not always followed the method which I have followed here in estimating the number of feet for the new meter house at the Citizens Works. There would not be any reason why I should not at the other meter houses. I treated the problem alike in so far as each meter house is concerned, where the conditions were like these. Of course, a good many meters fit on the foundation; they are right on the ground, [fol. 968] and there are no forms in that case at all. You see, everyone is different, a different condition. The meters are installed in the Citizens meter house differently than in the others. In the others, there is a cellar below them. It is true of many. I say there is a variation in that. In fact, there is a meter within about fifty feet of this meter, that sits directly on the ground in the Citizens, according to my memory. I think there is a meter that stands at the side of the original meter building. This is a new meter building. The slab form is made of wood and is a temporary structure to hold the slab while it is in wet concrete forms. When the slab is poured it has something to hold it up while it is setting. Then the slab form is taken away and the concrete supports itself. It is just a form to pour concrete. After we take the forms off the concrete we use it right in another place. We figure on using our forms about two and a half times. We find that is the average that the wood will last. Our units are based upon that assumption. The slab forms are placed under the entire meter floor, even under where the station meters are to be located, with the exception that I noted, where the saddles are that hold up these meters. I will show you a sketch of those here. The computation is for the gross floor area which includes them. I did not make any inquiries about the cost of any of the structures or buildings of the Brooklyn Union Gas Company. I know very little about the ages of those buildings. I would say the

building at 180 Remsen Street was built prior to 1890. That is purely a surmise. I have not the remotest idea [fol. 969] as to how long prior to that. I have not built any building like that in a business section of Brooklyn. I would not term it an obsolete form of building or type of building. I do not recollect offhand seeing any like that in the downtown section of Manhattan or Brooklyn, but I think there are a great many buildings that have that exterior. That is a classic exterior. It is a very good design. They are high ceilings. I think they they must be eighteen or nineteen feet. I have the exact height if you want it, to the inch. In the main banking room of the New Bowery Savings Bank, I think the clear height is 68 feet. It is just finished. That is right in an office building. The bank is right in the office building. It is a beautiful thing. It is the finest bank and office building in the world. It is unusual from the point of beauty. I construct office buildings. The average height or distance from the floor to the ceiling in the buildings which I have constructed, where private offices, partitioned offices occur, the average height from floor to floor is about twelve feet. In the portions where the showrooms occur it is unlimited. I mean I would not attempt to give a limit for it. I have a recollection of Thiebaut's Wallpaper Showroom. I think the main floor there is about fifteen to twenty feet. I know it is high. That is what I mean by unlimited. I am not sure that I have also been retained to make inventories and appraisals of the buildings and structures of the five subsidiary companies of the Brooklyn Union Gas Company. I think we have been. If I heard the names, I would know them.

As to the Flatbush Gas Company we have not done anything on that and I have no written order stating that we [fol. 670] are to do it. I have not conversed or talked about the subject with Col. Miller or anybody.

As to the Newtown Gas Company, the Richmond Hill and Queens, The Woodhaven Gas Light Company and the Jamaica Gas Light Company we have not done anything on that. During the former litigations of those companies we made an inventory and appraisal of their properties and also of the Brooklyn Union Gas Company. I have also inventoried and appraised the buildings and structures of

the New York and Queens Gas Company. I have testified in that case and also for the Bronx Gas & Electric Company and in the Kings County Lighting Company. I have also been retained to appraise the buildings and structures of the Consolidated Gas Company and its subsidiary companies. I have given about 80 per cent of my time to the preparation of inventories and appraisals for gas companies here in New York City, since last May. I own buildings myself. In making out my Federal Income tax I certainly take advantage of that provision allowing me to deduct a certain amount for depreciation of buildings. I would not take advantage of the Government. The long list of figures that the Colonel supplied me with was not furnished at any particular time. They were telephoned to the office from time to time as they were completed. I can't give you any idea as to the approximate time because they were all different dates. He has not given any to me within the last two or three months. I cannot give you the date that I last heard from Col. Miller on those. It was all through last summer, that is, 1923, at various times. I made a valuation of the buildings and appurtenances of the Brooklyn Union Company that were in existence on [fol. 971] October 1, 1919, and used as my unit prices, the prices of January 1st, 1914. The reproduction value as of January 1st, 1914, of those buildings and appurtenances which were in existence on October 1st, 1919, is $3,308,947.

[fol. 972] March 5, 1924.

JAMES H. JOURDAN

Direct:

I am the president of the plaintiff company. I have been president about ten years. I was elected, I think, in 1914. Just prior to that I was vice-president for about four years and prior to that I was chief engineer of the company for a number of years, and then I served in various capacities from 1882, as superintendent of the works to the various positions I have mentioned. I was with the Fulton Municipal Company in 1882, and then came to the Brooklyn Union in 1895, and at that time I was appointed one of the two engineers. The City was divided into two districts, the eastern district and the western district, and I was engineer of

the western district, and some years after that I was made chief engineer of the whole company, and that brought me up to about 1910, when I was elected vice-president and director of the company and in 1914 I was elected president.

I purchase the oil for the company. I have been doing that for fourteen years exclusively. Prior to that time I was associated with my predecessor, the president, in making up the oil contracts. My predecessor was my father, General Jourdan. The oil has been purchased under written contracts. Prior to entering into the contracts, to determine the company's requirements for the coming year, I have the engineer of manufacture make up the quantity that will probably be required for the coming years, based upon what we have used in previous years, and taking into [fol. 973] consideration the make of gas. I write for bids from various oil companies, sending a request to each company. The request for bids for 1922 was for oil for the last six months of 1921 and the first six months of 1922. The previous contract expired about the 1st of July, 1921. The first step in that connection for oil for 1922 was to write to a number of oil companies for bids in March, 1921, from which we got no response. That is, the oil companies would not make any contracts in March for delivery on the 1st of July, and in May of that same year I wrote again to practically the same concerns, or oil companies, for a supply from July 1, 1921, to July 1, 1922.

I wrote to the Texas Company on May 13, 1921. I wrote to the Pure Oil Company on the same date; and also on the same date again to the Atlantic Gulf Oil Corporation. On May 13th I wrote to the Standard Oil Company of New York. On the same date I wrote to the Tidewater Oil Company. On the same date I wrote to the Sun Company. On the same date I wrote to the Gulf Refining Company. On May 13th, the same year, 1921, I wrote to the Sinclair Refining Company. On the same date I wrote to the Standard Oil Company of New Jersey and on the same day I wrote to the Atlantic Refining Company. I have with me copies of the letters sent to those ten companies. They are in this file. You can find it for yourself (handing papers to counsel).

[fol. 974] The letters appear in the same form. I sent the same form to each one of the companies.

(Marked Plaintiff's Exhibit No. 175 for Identification.)

Plaintiff's Exhibit No. 175 for Identification refers to a communication of March 12th to these companies, in which apparently the terms and conditions were contained. They are not contained in this exhibit for identification. I have a copy of my letter of March 12th. I will let you have that (producing paper).

(Paper marked Plaintiff's Exhibit 176 for Identification.)

This letter dated March 12, 1921, Plaintiff's Exhibit No. 176 for Identification, contains the same form sent to the other companies. It was a letter of March 12th sent to each one of the ten companies to which I wrote later in May. I received replies to my letters sent in May to these ten companies. The replies from the various companies are all there (handing papers). I can pick them out for you. Plaintiff's Exhibit No. 177 for Identification, letter dated May 14, 1921, addressed to our company, signed "The Texas Company," and Plaintiff's Exhibit No. 178 for Identification, dated May 21, 1921, between the same parties, are the replies received from the Texas Company to our letter of inquiry. Plaintiff's Exhibit No. 179 for Identification is the reply received from the Pure Oil Company. Plaintiff's Exhibit No. 180 for Identification, is the communication which was received from Mr. Shinnick of the Pure Oil Company, after a conversation with him on the day of its date, but I am not sure [fol. 975] whether he had a conversation with me. However, I received that letter. This is all the May correspondence. The letter dated March 16, 1921, from Atlantic-Gulf Corporation, marked Plaintiff's Exhibit No. 181 for Identification, was received by me and is a reply to my communication to that company. A letter from Tidewater Oil Company, dated May 19, 1921, marked Plaintiff's Exhibit No. 182 for Identification, was received and it is the reply to my communication to that company. Plaintiff's Exhibit No. 183 for Identification, letter from the Sun Company, dated May 17, 1921, was received in reply to my communication to that company. I don't recall, now, whether I did or did not have any meeting or conference or further correspondence with representatives of that company. At any rate, there is no further correspondence in my file with this company. Plaintiff's Exhibit No. 184 for Identification, communication from the Gulf Refining Company, dated May

19, 1921, was received in reply to my communication to that company. Plaintiff's Exhibit No. 185 for Identification, being a communication from the same company, dated May 21, 1921, was also received subsequent to the first. Plaintiff's Exhibit No. 186 for Identification, being a letter from the Sinclair Refining Company, dated May 20, 1921, is a reply received from that company to our communication. Plaintiff's Exhibit No. 187 for Identification, being a letter signed "T. J. Williams," dated May 16, 1921, is a reply re- [fol. 976] ceived to my communication addressed to the Standard Oil Company of New Jersey. Plaintiff's Exhibit No. 188 for Identification, being a letter from the Atlantic Refining Company, dated May 21, 1921, is the reply received to my communication to that company. I have also addressed a communication to the Standard Oil Company of New York, the same in terms as the letter to The Texas Company marked Plaintiff's Exhibit No. 175 for Identification. I have had further negotiations with representatives of that company, and dealt with Mr. C. M. Higgins, and, as a result of these negotiations, I entered into a contract with that company, making no contracts with any of the other companies that I have mentioned. Plaintiff's Exhibit No. 189 for Identification, is a photostat copy of contract dated May 25, 1921, between the Standard Oil Company of New York and my company, which I entered into as a result of negotiations with Mr. C. M. Higgins representing the oil company. As stated in Plaintiff's Exhibits 184 and 185 for Identification, I requested the Gulf Refining Company to send samples of their oil for our analysis, and it was turned over to our chemist and Engineer of Manufacture—never having used their oil, and the chemist made a report to me in writing. Plaintiff's Exhibit No. 190 for Identification is the report received—a copy of it. When I say he made a report to me, I mean he made it to the Engineer of Manufacture at my request. It came to me and I had that report at that time. From the tests which I caused to be made, I came to [fol. 977] a conclusion with reference to this oil, that the Gulf Oil was inferior to that which we had been using, and as we were manufacturing gas on the candle-power basis, we were very desirious of having an oil that would stand up for efficiency in candle-power requirements. That is based on this report. Personaliy, I know nothing about it,

except what the report states. I did not try any of the gas oil in any of our machines. The only knowledge I have as to the character of that gas oil is through the report made by the chemist and investigations made by the Engineer of Manufacture. The investigations he made are all set forth in the report.

This Plaintiff's Exhibit No. 191 for Identification dated May 25, 1921, signed R. W. Bush, Engineer of Manufacture, is the report which I just mentioned to Mr. Cummings. This report I also had before me at the time I reached my determination not to contract with the Gulf Refining Company. On April 4, 1922, a communication was sent to the Gulf Refining Company. On the same date to the Sun Company. On the same date to the Texas Company. On the same date to the Atlantic-Gulf Oil Corporation; on the same date to the Standard Oil Company of New York; and the Gulf Refining Company. On the same date to the Standard Oil Company of New Jersey, the Sinclair Oil & Refining Corporation; and also on the same date to the Tidewater Oil Company. At this time I did not write to the Pure Oil Company. I can give counsel the correspondence with these nine companies that I have mentioned. [fol. 978] Plaintiff's Exhibit No. 192 for Identification, being a letter dated April 4, 1922, addressed to Mr. G. R. Nutty, Vice-president of the Gulf Refining Company, is the same in contents and form as the letters sent to the other eight companies. This is a copy of the letter sent to the Gulf Refining Company. Plaintiff's Exhibit 193 for Identification, being communication from the Gulf Refining Company dated April 11th; Plaintiff's Exhibit 194 for Identification, being a communication from the Texas Company dated April 5; Plaintiff's Exhibit 195 for Identification, being communication from The Texas Company dated April 14th; Plaintiff's Exhibit 196 for Identification, being communication from the Atlantic Refining Company, dated April 11th; Plaintiff's Exhibit 197 for Identification, being communication from the Atlantic Refining Company dated April 13th; Plaintiff's Exhibit 198 for Identification, being communication from the Standard Oil Company of New York dated April 7th, 1922; and Plaintiff's Exhibit 199 for Identification, being communication from Tidewater Oil

Company, dated April 17th, 1922. These exhibits for identification are the replies to my communications received from the respective companies.

Plaintiff's Exhibit 200 for Identification, being communication from the Union Petroleum Company, dated April 6th, 1922, is a reply to my communication to the Sinclair Oil & Refining Company. I stated that I also communicated with the Standard Oil Company of New York. I had oral negotiations with their representative, Mr. C. M. Hig- [fol. 979] gins, and those negotiations resulted in the making of a written contract.

Exhibit 201 for Identification is a correct photostatic copy of the contract entered into with the Standard Oil Company of New York, dated May 1st, 1922, as the result of negotiations with Mr. Higgins (handing paper to witness). I thereafter made a supplementary purchase evidenced by letters from the Standard Oil Company of New York. Plaintiff's Exhibit 202 for Identification, being a copy of a letter from Mr. Higgins of the Standard Oil Company of New York, dated January 26th, 1923, and Plaintiff' Exhibit 203 for Identification, being a copy of a letter dated January 26th, 1923, to Mr. Higgins from me. These papers set forth the terms of my supplemental purchase made at that time. This was after some oral negotiations with Mr. Higgins. Oil has been delivered under the contracts which have been marked for Identification. Actual deliveries were made. That is, deliveries have been completed, so far, under all the contracts which have been marked for Indentification. That covered the period to and including December 31, 1923.

On October 11, 1923, I addressed a communication to the Gulf Refining Company for a supply from January 15, 1924, to the end of that year 1924, or for a longer period if the were prepared to do so. Similar letters were sent on the same date to Mr. Higgins of the Standard Oil Company of New York, the Standard Oil Company of New Jersey, the Sinclair Oil & Refining Company, the Sun Company, the Atlantic Refining Company, the Tidewater Oil [fol. 980] Company, the Atlantic-Gulf Refining Oil Corporation and the Texas Company.

Plaintiff's Exhibit No. 204 for Identification, copy of

a communication dated October 11, 1923, addressed to Mr. G. R. Nutty, vice-president of the Gulf Refining Company, is a copy of a communication sent to that company on that date which I have mentioned, and the communications sent to the other companies on that date were the same in form, and that is a copy of the letter sent to Mr. Nutty.

Plaintiff's Exhibit 205 for Identification, communication from the Gulf Refining Company dated October 20, 1923; Plaintiff's Exhibit 206 for Identification, communication from the Standard Oil Company of New York, dated October 15, 1923; Plaintiff's Exhibit 207 for Identification, communication from the Standard Oil Company of New York, dated October 22, 1923; Plaintiff's Exhibit 208 for Identification, communication from Standard Oil Company of New Jersey, dated October 19, 1923; Plaintiff's Exhibit No. 209 for Identification, communication from the Sinclair Refining Company, dated October 17, 1923; Plaintiff's Exhibit No. 210 for Identification, communication from the Sun Oil Company, dated October 13, 1923; Plaintiff's Exhibit No. 211 for Identification, communication from the Atlantic Refining Company, dated October 20, 1923; Plaintiff's Exhibit No. 212 for Identification, communication from Tidewater Oil Company, dated October 16, 1923; Plaintiff's Exhibit No. 213 for Identification, communication from Atlantic-Gulf Oil Corporation, dated October 17, 1923; and Plaintiff's Exhibit No. 214 for Identification, [fol. 981] communication from the Texas Company, dated October 19, 1923. These exhibits for identification are the replies received from the respective companies to my communications. As a result of these inquiries and negotiations, I entered into a contract dated October 25, 1923, with the Standard Oil Company of New York.

Plaintiff's Exhibit No. 215 for Identification is a correct photostat copy of that contract, for 1924.

[fol. 982] ROBERT W. BUSH

Direct:

I am the Engineer of Manufacture of the Brooklyn Union Gas Company and also of its subsidiary companies

so-called. I was educated at the Massachusetts Institute of Technology and Harvard College. I graduated from Harvard College in the Class of 1889 with Degree of A. B., and honorable mention in chemistry. In 1889 I entered the employ of the Boston Gas Light Company of Boston, Mass., and was assigned to the North End Works of that company. I received thorough practical instruction and experience in the several branches of coal gas manufacture, beginning with the retort house, and later was cadet engineer. I went in as a regular member of the Class of 1887 at the Massachusetts Institute of Technology, and at the end of that year I left and went to the Pacific Coast for a time. I did not wait for my degree. I came back and graduated at Harvard, taking four years there. I was also trained in main laying, service work and distribution of gas. As Cadet Engineer I supervised various works operations. In 1891 I was appointed Cadet Engineer and Chemist of the Commercial Point Works of the Boston Gas Light Company. Later, in 1891, I was appointed Superintendent of the South Boston Gas Light Company, which was a coal gas plant, in charge of manufacture and distribution, including the laying of mains and services. In 1892 I became superintendent of the Commercial Point Works of the Boston Gas Light Company in charge of manufacture. This was a coal gas plant. I remained with the [fol. 983] Boston Gas Light Company until September, 1893, in charge of the Commercial Point Works, at which time that plant was discontinued for making gas. The plant was shut down. In 1893 I entered the employ of the Metropolitan Gas Light Company of Brooklyn, New York, as Superintendent in charge of manufacture and of main and service work. This company manufactured carburetted water gas. In 1894 I was appointed Engineer of the Metropolitan Gas Light Company of Brooklyn, New York, in charge of manufacture and distribution. In 1895, the property and franchises of the Metropolitan Gas Light Company were purchased by the Brooklyn Union Gas Company, and I became Engineer of the Metropolitan Works in charge of manufacture. That was in 1895. In 1907 I was appointed to my present position as Engineer of Manufacture of the Brooklyn Union Gas Company in charge of

the manufacture at all plants. In 1894 I was appointed Engineer of the Metropolitan. I went with them in 1893. I was made Superintendent and I later became Engineer in 1894. I am also a licensed engineer of the State of New York. I have charge of manufacture at all the plants of the company. In 1893 I came to Brooklyn with the Metropolitan Gas Light Company. I was familiar in 1895 with various plants which were purchased by the plaintiff in that year. They were the Citizens Works; the Fulton Works; the Nassau Works; the Williamsburg Works; the Metropolitan Works; the Brooklyn Works; the Union Works—I did not include in the list the Equity Works, [fol. 984] which was purchased later on. The Equity Works and The People's Works were the vendor companies, but I did not have any data on that, that I could speak about. I just left them out. They were not being operated in 1895, and for some time before that, and that is the reason I omitted them from this answer. I included the plants that were in operation at that time with the again exception of the Equity Works. If my memory serves me right, the Equity Works were purchased in about—really I don't remember, it was 1896 or 1906, it was not so very long after—I think it was in 1896. I made it my business when I came to Brooklyn to get to know the men who were in charge of other work in Brooklyn, and to familiarize myself with what the works were and what they did, what kind of apparatus in a general way they had, and I wanted to compare the results that they obtained with the results which I got in my own works, and I did come to know these men and visit their works, and observed what they were doing. I compared their operation with my own. The Metropolitan had a capacity of 2,000,000 cubic feet per day. The Citizens Works had a capacity of 2,500,000; The Fulton Works, 5,000,000; the Nassau Works, 5,000,000; the Williamsburg Works, 6,300,000, approximately. I am giving approximate figures. The Brooklyn, 5,500,000; the Union, half a million—500,000. The Equity is 2,100,000. I think that is all. I did not consider the Peoples. That was not an operating works. [fol. 985] I knew there were works there, and they had coal gas benches there. It was not a going plant at the time

and I did not consider it. That is, it was not operated subsequent to 1893, during the time I have been in Brooklyn. At that time, and as the result of visiting and looking at these plants, I familiarized myself with the holders and gained knowledge of the holders. The holders which were in existence at these various plants and other locations in 1895 and which were purchased by the Brooklyn Union Gas Company are still in use with one exception, that is a small holder of about 100,000 capacity which was at the Union Station, and was withdrawn about two years ago. The locations and capacities of the holders which were purchased are Third Avenue and DeGraw Street, capacity 985,000. That was part of the Fulton Works. The capacity was 985,000 cubic feet. DeGraw Street, Nevins and Third Avenue, one holder, 252,000 cubic feet. A second holder at the same location, 284,000 cubic feet. That was the Fulton Works, in the vicinity, at the Citizens Works, Fifth and Smith Street, holder, 493,000 cubic feet. And a second holder 245,000 cubic feet. At 12th Street and Gowanus Canal, holder 360,000 cubic feet. Another one 370,000 cubic feet. A third holder 575,000 cubic feet. All of those three holders were part of the equipment of the Citizens Plant. The last three were at the Metropolitan Plant, 12th Street. The Metropolitan Works, that is the last three holders which I have mentioned; at the Brooklyn Works, Plymouth and Gold Streets, one holder 296,000 [fol. 986] cubic feet; a second one, 299,000 cubic feet; a third, 301,000 cubic feet. At Front and Bridge Streets, also a part of the Brooklyn Works, one holder 580,000 cubic feet. One holder of 1,146,000 cubic feet capacity. Keap Street and Kent Avenue 370,000 cubic feet holder. That was a part of the Nassau Works—holder capacity. Also part of the Nassau Works, a holder at 39 Skillman Street, 304,000; one at Rutledge Street and Kent Avenue, 1,056,000 cubic feet. That was under the jurisdiction of the Nassau Plant at that time. 5 Skillman Street, a holder of 563,000 cubic feet, and a second holder in the same location, adjoining location, 539,000 cubic feet. Those two holders were formerly the property of the Peoples Gas Company, but they were operated at the time I was there from the Nassau Company. Kent Avenue and North 12th Street,

that is the Williamsburg Works, one holder, 460,000 cubic feet; a second holder of 1,100,000 capacity. Scholes and Bogert Streets, holder of 1,499,000 cubic feet and Ashford Street and Atlantic Avenue a holder of 100,000 cubic feet, and a second holder of 500,000 cubic feet. Those two last holders were at the Union Works. There was a holder at Jamaica, still in use. It is owned by the Brooklyn Union Gas Company. I don't know who they acquired it from. These old holders are holders I saw when I came here. That was there at that time. I do not know who the Brooklyn Union acquired it from.

[fol. 987] I have that Jamiaca capacity. That was at Beaver and Church Streets, Jamaica, 500,000 cubic feet; that is the holder. As part of my duties each year prior to April 1st I ask for bids from the various coal companies for the different kinds of coal which we use. The bids come to me. I tabulate them and I decide upon which bids to accept, and I make a list of the bids which I forward through channels, recommending the acceptance of these certain particular bids, and a letter of acceptance is written by the secretary of the company. I forward a recommendation through channels to the president. Contracts for the purchase of coal and coke are made in accordance with my recommendation. I have been doing this since I became engineer of manufacture, which was in 1908. My duties were assumed in November of 1907. What is known as the coal year upon which these companies make contracts is from April to April in each year. We purchase coal of a size known as broken coal, and No. 3 buckwheat coal and bituminous coal, and we also purchase coke. Some time prior to April, 1921, was when I sent bids for this supply. For instance, the period would be from April 1, 1921, to March 31, 1922. I asked them for bids. Sometimes there are bidders whom I have not asked, but who ask me to give them some coal. I sent thirty-three requests in that coal year, and of that number of requests for bids, I received replies from 22. I sent requests requesting them to bid, to the Lehigh & Wilkes-Barre Coal Company, the Lehigh Valley Coal Sales Company. I got a bid from the first one, and then from The Lehigh Valley [fol. 988] Coal Sales Company, and I got an answer from

them. Williams & Peters, I got a bid from them. The Philadelphia & Reading Coal & Iron Company; I received a proposal from them. Robinson, Haydon & Company replied that they were not in position to quote. Pattison & Bowne said that they hoped to advise us, but they never did furnish a bid which we would take. I don't recall having gotten anything more than this one letter. They said this, that they had received our inquiry and "This matter will receive our consideration and we hope to advise you as soon as we are able to determine how much of this size can be spared." Now, the Lehigh Coal & Navigation Company gave us a reply, but we did not take coal from them, as I recall it, for that period. They stated that they had established a price of a certain figure, and, according to my records, there was no actual offer made that we would accept. They didn't bid for it. They simply said that their price was a certain figure for the year ending March 31st, 1922, for a limited tonnage only. That was not anything that was definite. Now, H. B. W. Haff; we had made an inquiry of them asking them to furnish us a bid on 125,000 tons of broken coal, more or less. They stated, "Your inquiry about 125,000 tons of broken coal is rather early in my opinion, for it is my belief that considerable changes may occur between now and the 31st of March, which may be, as far as broken, No. 3 buckwheat and bituminous coal are concerned, more advantageous." From Meeker & Company, no bid. Weston, Dodson & Company, [fol. 989] no bid, no reply. The Wentz Company, no bid. Heilner & Son, no reply. Pinehill Coal Company, no reply. Thorne, Neale & Company, no bid. F. A. Potts & Co., no bid. C. B. Sturges, no reply. St. Clair Coal Company, there was no bid. Whitney & Kemmerer, no bid. Dickson & Eddy, no bid. Burns Bros., Coal Company, no bid, no reply. Van Deusen Brothers, no bid. Majestic Coal Company, Inc., no reply. Parrish, Phillips & Company, no bid. Garfield & Proctor Coal Company, no reply. The Archibald, McNeil & Sons Co., Inc., no bid on particular coal. Stokes Coal Company, no reply. Seiler Coal Company, no reply. Alden Coal Mining Company, no bid. St. George Coal Company, no reply. Johnson & Company, no bid. Madeira, Hill & Company, no bid. Williams, Darnell & Com-

pany, no bid. These I am reading are for broken coal. I subsequently entered into a contract for broken coal for the period from April 1, 1921, to March 31, 1922 with the Lehigh & Wilkes-Barre Coal Company, Williams & Peters; Lehigh Valley Coal Sales Company; Stokes Coal Company; Philadephia & Reading Coal & Iron Company; Mederia, Hill & Company, and Dickson & Eddy. I have a copy of the request that I sent to all these people. It was a form letter that I sent, the same letter to each one of them. Most of them replied, but they did not submit a proposition. There were twenty-two replies received out of that lot.

Plaintiff's Exhibit No. 216 for identification, dated February 1, 1921, and addressed to the Lehigh & Wilkes-Barre Coal Company contains the form used for my communication with each one of these concerns I have named.

[fol. 990] Plaintiff's Exhibit No. 217 for Identification, consisting of three sheets, and it is a correct photostatic copy of the bid of the Lehigh & Wilkes-Barre Coal Company, dated March 17, 1921, and the acceptance thereof by our company dated April 8, 1921. Plaintiff's Exhibit No. 218 for Identification, consisting of four sheets, is a correct photostatic copy of the proposal of Williams & Peters, dated March 10, 1921, and the acceptance by our company of that proposal contained in two communications dated April 8 and April 30, 1921, respectively. Plaintiff's Exhibit No. 219 for Identification, consisting of two sheets, is a correct photostatic copy of the proposal of the Lehigh Valley Coal Sales Company, dated March 25, 1921, and the acceptance of our company dated April 8, 1921. Plaintiff's Exhibit No. 220 for Identification, consisting of two sheets is a correct photostatic copy of the proposal of the Stokes Coal Company, Inc., dated March 22, 1921, and the acceptance thereof by our company, dated April 8, 1921. Plaintiff's Exhibit No. 221 for Identification, consisting of two sheets, is a correct photostatic copy of the proposal dated March 31, 1921, of the Philadelphia & Reading Coal & Iron Company, and the acceptance thereof by our company dated April 8, 1921. Plaintiff's Exhibit No. 22, for identification, consisting of two sheets, is a corect photostatic copy of the proposal of Madeira, Hill & Company, dated March 24, 1921, and the acceptance thereof by our company dated April 8, 1921.

[fol. 991] Plaintiff's Exhibit No. 223 for identification, consisting of two sheets, is a correct photostatic copy of the proposal of Messrs. Dickson & Eddy, dated March 10, 1921, and the acceptance thereof by our company dated April 8, 1921. I kept in touch with coal prices; I keep in touch with them throughout the year by reading the trade journals, talking with people who are concerned with coal prices, and generally keeping in touch with all matters pertaining to coal, especially broken coal. Also I keep in touch with the mine prices of all the different coal companies with whom we deal.

Regarding my practice with reference to No. 3 buckwheat —in the case of No. 3 buckwheat coal, we do not ask for bids for the reason that, firstly, we use a comparatively small quantity of No. 3; and secondly, the coal companies are rather anxious to have us take as much No. 3 buckwheat as we can from them, in consideration of the fact that they supply us with a large quantity of broken coal, in connection with such deliveries. We gave an order to the coal company for a cargo of No. 3 buckwheat coal at the time that we wished it delivered. That is, I ordered buckwheat coal from time to time. I ordered it from the same companies from whom we were buying broken coal. I have kept a record in my office of the quantities purchased and the prices paid for No. 3 buckwheat. These records show the quantities received and the prices, taken from the bills.

On Plaintiff's Exhibit 224 for identification, I tabulated, from my records first the names of the companies from [fol. 992] which I buy broken coal, buckwheat coal, bituminous coal and coke, then the quantities and then the prices during three periods, first from April 1st, 1921, to March 31, 1922; then from April 1st, 1922, to March 31, 1923; and then in our last column we have April 1st, 1923; to January 31st, 1924. This shows the number of tons deliverel during the period, and it shows the amounts in money and the price per ton. In the last column headed "April 1st, 1923, to January 31st, 1924"—that is this present January—I get my information on broken coal from the tabulation that I asked the auditor to prepare for me from the books of the company. I did not prepare this personally. I checked it up afterwards with the figures, so that I am prepared to state that it is correct, from records in my office. We keep an account of the quantities of coal as they come in, and of

course we have the prices and we can check with the auditor. This is the contract price at the present time. It shows also the amount actually paid under the contracts. It is figured upon actual deliveries. It is checked against the bills. The bills for coal come to me and they are checked in my office and they are checked with the quantities of coal reported received at the works, and they are sent to the works and entered there and they come back and go to the auditor. The examination is the same in both.

Coke is sold for the same year that coal is sold, from April to April. A contract is made for the same time, the same [fol. 993] period. I do not send our requests for bids with reference to coke. I had tried coke at previous times, and different kinds of coke, and based on my knowledge of what kind of coke was required for satisfactory operation of a water gas plant. I made a contract with the Seaboard By-Product Coke Company. I have that contract with me for the first period (handing paper to counsel).

Exhibit 225 for identification, consisting of three sheets, is a correct photostatic copy of the proposal of the Seaboard By-Product Coke Company dated December 3, 1921, and accepted by our company dated December 21, 1921.

With reference to the bituminous coal for the year 1922, it was usually our practice to follow the same course as with broken coal, to receive bids. I sent out requests for bids. For the year 1922 I don't think we sent out requests for bids. We received bids, but we did not request them ourselves. They came to us from the vendor companies. During the year 1922 we made a contract for 10,000 tons as I recall it of bituminous coal. I think I have the bid on that.

The same coal year prevails with reference to bituminous coal as does with reference to broken coal. For the coal year from April 1st, 1921 to March 31, 1922, I received proposals for the sale of bituminous coal from Archibald, McNeil & Sons, Company, Inc.; Maderia, Hill & Company; Stokes Coal Company; Empire Coal Mining Company; Gauley Coal Mining Co., Inc.; Producers Fuel Company; [fol. 994] Logan Coal Company; Watkins Coal Company; Wentz Company; The Equitable Fuel Company. We bought from the Empire Coal Mining Company, the Archibald, McNeil & Sons Company, Inc., and the Stokes Coal Company, and the Madeira, Hill & Company—four people.

Plaintiff's Exhibit 226 for identification, consisting of two sheets, is a correct photostatic copy of the proposal of Madeira, Hill & Company dated May 3, 1921, accepted by our company dated May 23.

Plaintiff's Exhibit 227 for identification, consisting of two sheets, is a correct photostatic copy of the proposal of the Stokes Coal Company, Inc., dated April 1st, 1921 and acceptance by our company dated June 9.

Plaintiff's Exhibit 228 for identification is a correct copy of the proposal of Empire Coal Mining Company dated April 11, 1921 and accepted by our company dated May 23.

Plaintiff's Exhibit 229 for identification is a correct copy of the contract made May 23, 1921, by our company with the Archibald McNeil & Sons Company, Inc. This is all the same kind of coal. It is all bituminous coal. One particular kind of bituminous is better coal than the other. We divided up our contracts at that time, and one coal proved to be better than some of the other coal. So far as we could find out, we thought it was all the same quality when we purchased it.

My practice with reference to broken coal, bituminous, and buckwheat and coke for the period of the coal year from April 1st, 1922, to March 31, 1923, and from April 1, [fol. 995] 1923 to January 31, 1924 I made my purchases in the same way, with the same knowledge and information in my possession at the time. I sent requests for bids for broken coal, for the coal year April 1, 1922, to March 31, 1923. The names of the companies to which I sent requests for bids were the following: Lehigh & Wilkes-Barre Coal Company; Williams & Peters; Lehigh Valley Coal Sales Company; The Philadelphia and Reading Coal and Iron Co.; Robinson, Haydon & Company; Pattison & Bowns, Inc.; Lehigh Coal & Navigation Company; Delaware, Lackawanna & Western Coal Company; Stokes Coal Company; Dickson & Eddy; H. B. W. Haff; Meeker & Company; Weston, Dodson & Company; Wentz Company; The Archibald, McNeil & Sons Company, Inc.; Burns Brothers Coal Company; Whitney & Kemmerer; St. George Coal Company; Parrish, Phillips & Company; Thorne, Neale & Company; F. A. Potts & Company; Heilner & Son; Majestic Coal Company, Inc.; Pine Hill Coal Company; Van

Deusen Brothers; Garfield & Proctor Coal Company; Seiler Coal Company; Alden Coal Mining Company; St. Clair Coal Company; International Shipfittings & Supply Corporation. I was not able to make any written contracts with any of these concerns or any other concerns for broken coal for this coal year, and we were unable to make contracts elsewhere. During this year the coal strike occurred. During the coal year April 1, 1922, to March 31, 1923, we made every endeavor to get coal from anybody we could get it from. I bought it from time to time on orders, if we could get any. I am speaking now of the coal year from 1922 to 1923; April 1st, 1922 to March 31st, [fol. 996] 1923. We received coal and put in orders for coal to companies from whom we had bought coal before, and the companies advised us that they would endeavor to supply as much coal as they could during the period. In other words, during that period it was a matter of order and supply from time to time. We sent an order for each cargo. The names of the companies from which we bought broken coal during that period are shown on Exhibit 224 for identification, and the amounts and prices are tabulated there from the information which I have already described. With reference to buckwheat coal during that year, we bought it at the prices, in the same way I have described, from the companies shown on Exhibit 224 for Identification.

With reference to bituminous coal during that period, we asked for a bid and purchased from the Empire Coal Mining Company; and we also received communications from other companies. We purchased also a small amount from Pilling & Company. Companies other than the Empire Coal Mining Company and Pilling & Company sent us bids for bituminous coal during that period. We had communications from other companies who came to see us and wanted to get a part of our broken coal contract—our bituminous coal contract, and we finally decided to take the bulk of our bituminous coal from the Empire Coal Mining Company, by reason of the quality of the coal and the experience which we had with that company of keeping us supplied when there was a great scarcity of coal.

[fol. 997] Plaintiff's Exhibit No. 230 for Identification, consisting of two sheets, is a proposal dated March 16th,

1922, from the Empire Coal Mining Company and the acceptance of our company dated June 23, 1922. Plaintiff's Exhibit No. 231 for Identification, consisting of two sheets, is also a correct copy of the proposal dated January 18, 1923, and accepted January 22, 1923, by our company and Pilling & Company for bituminous coal. With reference to coke for that period, I talked with different people who had coke for sale, and I had tried some time ago from other sellers, and based on my experience and the value of the coke to us, I made a contract with the Seaboard By-Products Company. I made contracts also with Pilling & Company and Madeira, Hill, for a limited supply. That is, the larger portion of our coke was bought from Seaboard By-product Coke Company. The Seaboard and Lilling and Madeira, Hill & Company are the ones that I had particular reference to.

Plaintiff's Exhibit No. 232 for Identification, consisting of two sheets, is a correct copy of the proposal of Seaboard By-product Coke Company, dated June 21, 1922, and the acceptance of our company dated June 22, 1922; Plaintiff's Exhibit No. 233 for Identification, consisting of four sheets, is a correct copy of the proposal of Seaboard By-product Coke Company dated April 1, 1922, and the acceptance of our company dated April 6, 1922.

We had two contracts during that coal year, April 1, [fol. 998] 1922, to March 31, 1923, with the Seaboard By-product Coke Company.

Plaintiff's Exhibit No. 234 for Identification, consisting of two sheets, is a copy of the proposal of Pilling & Company, dated January 12, 1922, and the acceptance of our company of the same date; Plaintiff's Exhibit No. 235 for Identification is a correct copy of the proposal of Pilling & Company dated January 6, 1923, and the acceptance of our company dated January 12, 1923 and Plaintiff's Exhibit No. 236 for Identification is a correct copy of the proposal of Madeira, Hill & Company dated January 17, 1923, and the acceptance of our company dated January 22.

The amount of coke purchased in the year from April 1, 1922, to March 31, 1923, shows a considerable increase due to the strike of the hard coal miners and consequently a greater consumption of coke.

With reference to broken coal, during the period from

April 1, 1923, to January 31, 1924, we requested bids from the Lehigh & Wilkes-Barre Coal Company, and received a bid from them; and from Williams & Peters, and they made a bid. We asked for a bid from the Lehigh Valley Coal Sales Company and they made a bid. We asked the Stokes Coal Company, Inc., to bid and we received a bid. We asked for a bid from the St. George Coal Company and we received one. Pattison & Bowns took over the business of [fol. 999] Williams & Peters during that year. The companies we sent requests for bids and received no bids from on broken coal, April 1, 1923, are: The St. Clair Coal Company; Alden Coal Mining Company; Garfield & Proctor Coal Company; Pinehill Coal Company; Majestic Coal Company, Inc.; Heilner & Son; Parrish, Phillips & Company; Whiting & Kemmerer; Burns Bros., and the Delaware, Lackawanna & Western Coal Company. These negotiations resulted in some contracts, with Williams & Peters; the Lehigh & Wilkes-Barre Coal Company; Lehigh Valley Coal Sales Company; St. George Coal Company and Stokes Coal Company.

Plaintiff's Exhibit No. 237 for Identification, consisting of four sheets, is a correct copy of a proposal received from the Stokes Coal Company, Inc., dated March 29, 1923, and the acceptance thereof by our company, and a proposal from the same Stokes Coal Company dated September 28, 1923, and the acceptance thereof by our company; Plaintiff's Exhibit No. 238 for Identification, consisting of four sheets, is a correct copy of a proposal dated April 26, 1923, from the St. George Coal Company, and the acceptance thereof by our company dated May 3, 1923, and a subsequent letter from the St. George Coal Company dated September 26, 1923, with further reference to prices, and an acceptance thereof by our company dated October 3, 1923, acknowledging receipt of the communication of September 26, 1923; Plaintiff's Exhibit No. 239 for Identification is a correct copy of a proposal dated April 13, 1923, from the [fol. 1000] Lehigh Valley Coal Sales Company, the acceptance thereof by our company dated April 20, 1923, a further communication with reference to price from the Lehigh Valley Coal Sales Company, dated October 3, 1923, and the acknowledgment of this communication dated October 8, 1923; Plaintiff's Exhibit No. 240 for Identification is a

correct copy of a proposal received from the Lehigh & Wilkes-Barre Coal Company dated April 2, 1923, the acceptance thereof by our company, dated April 6, 1923, a further communication from the Lehigh & Wilkes-Barre Coal Company dated September 21, 1923, and the acknowledgment thereof by our company dated October 3, 1923; Plaintiff's Exhibit No. 241 for identification is a correct copy of a proposal from Williams & Peters dated March 27, 1923, the acceptance thereof by our company dated March 29, 1923, a letter from Pattison & Bowns, dated September 24, 1923 and our acknowledgment thereof dated October 23, 1923. Pattison & Bowns, Inc., took over the business of Williams & Peters during the year.

With reference to buckwheat coal during this period, the process of acquiring it was the same as I testified to with reference to the preceding periods. We bought it from time to time from the companies with which we had contracts for broken coal. Plaintiff's Exhibit No. 224 for identification correctly sets forth the quantities and prices of buckwheat coal during that period.

With reference to bituminous coal during the period of [fol. 1001] April 1, 1923, to March 31, 1924, we solicited business for that. We were in receipt of a proposal from the company we had dealt with in the previous year, the Empire Coal Mining Company, and we accepted a proposal from them for the entire quantity of bituminous coal, practically. Referring to Plaintiff's Exhibit No. 224 for identification, there was a small quantity purchased from Whitney & Kemmerer and from the Meleroft Coal Company as a trial, but not for any period, over a period of time. It is a matter of 366 tons from Whitney & Kemmerer and 352 tons from the Meleroft Coal Company. That was not the subject of a written contract. I don't recall receiving offers from companies other than the Empire Coal Mining Company.

Plaintiff's Exhibit No. 242 for identification is a correct copy of the proposal of the Empire Coal Mining Company dated April 1, 1923, and the acceptance thereof by our company dated June 14, 1923.

With reference to coke during this period I took up the matter with the Seaboard By-product Coke Company previous to the time of expiration of the existing contract and,

after a thorough discussion, going into all the facts, it was my belief that the thing for us to do was to accept or make another contract with the Seaboard By-product Coke Company ofr the ensuing year, and we did make such a contract. Plaintiff's Exhibit No. 243 for identification is a correct [fol. 1062] copy of an agreement between the Seaboard By-product Coke Company and our company, dated March 29, 1923. Actual deliveries have been made and paid for under all these contracts which I have stated in accordance with this Plaintiff's Exhibit No. 224 for identification.

The labor at the different manufacturing plants is a matter that comes first under the jurisdiction of the superintendent of the plant or the engineer; that is, as to hiring men. The actual hiring of the men comes up to the superintendent or engineer of that particular plant. So far as wages go, there are certain definite wages paid to definite classes of workmen, different ratings, and so far as any increase in the general schedule of wages, that would be a matter which would come to me and which I would have to pass upon and give my approval or disapproval. In the past and since I have been engineer of manufacture, I have had jurisdiction over the wages paid at the various plants and determined them. The quantity of labor at any particular plant for any particular purpose would of course depend a great deal upon the character of the work going on and what the man in charge of the plant felt that he had to have to do his work. Of course, I keep in touch with the whole question and if I see that there is more labor at any plant or more men carried on the payroll, my first thing to do is to question the superintendent and find out why. And, if there was a reasonable explanation, I would leave that to him. If there is not, I would do something else. As [fol. 1063] engineer of manufacture I have the last say and control the quantity of labor at the various plants. That is my responsibility. Bills for coal come to me. The coal is weighed at the works as it is taken off from the coal barge of the company delivering the coal. There is a form for recording the amount of coal weighed over the scales and that form daily, filled out by the superintendent, comes down to me as soon as a boat is unloaded. For every boat that is unloaded I get these forms giving the quantity of coal received. And then the bill comes to my office and I send it to the works which received the coal, and they make

an entry and send the coal bill back to me. Of course the coal is checked in my office as to price. The quantity is checked as received at the works, and is compared with the bill of lading weights. There is a double check on coal bills, first as to quantity at the works and then again as to quantity and price in our office. All coal is taken out from the storage pile by a conveyor or other suitable means, and is carried to the generator house and before being used in the generators this coal is weighed as it comes into the generator house. A record is kept of that. We get a monthly report of the coal that has been used in the generator house. That comes down to me that way. We also get a daily report, from each works. It is the same practice for generator and boiler fuel.

[fol. 1004] Gas oil is received in barges alongside our works. It is pumped out from the barges to our tanks and measurements made by employees of the works, in the first place, of the quantity of oil in the tanks received. The two men who are entrusted with the job of measuring the oil measure it separately, and each man makes his own measurement and no measurement is accepted as final unless there is an agreement between the two. If there is any question about there being a slip in the amount of the oil, that would be caught. Of course a report of all such measurements is made to the superintendent. There are two places from which we get a record of the quantity of oil. For instance, in the case of the oil coming by barge, we would first send to the tank into which this oil was to be pumped and have measurements recorded, have the tank thoroughly shut off from any connection with any other tank. The pumping would start, and before pumping begins we have the tank shut off, and then the measurements of the tank are taken at that time; the depth of the oil in the tank is recorded, and that is recorded on a form which we have. When the pumping is finished, measurements are taken again and checked and the difference between what we had on hand at the start and what has been found at the end of the pumping shows how much oil we received. These men that I have talked about so far are employees of the company. In some cases there is someone present at the unloading of an oil barge representing the vendor. That would be a representative of Charles [fol. 1005] Martin & Company, Produce Exchange Inspec-

tors. They represent the vendor. I receive a report from Charles Martin & Company stating the measurements of the oil as delivered from the tanks of the vendor companies and giving the measurements, and the whole story of how much oil they sent to us, specifying the number of tanks in the barge from which this oil was drawn. The measurement is made as the oil is withdrawn from the tanks of the vendor companies, and it is also checked by the measurement of the oil in the tanks of the barge. I get a report of the measurements made by our own employees, and I get the bills from the vendor, so that for the purpose of checking I have Martin's report, the report of our own men and the bills. We check the amount of the bill with the amount of our own measurements shown by our own measurements, and should there be any very great differences, marked differences, we would find out whether there was any discrepancy in the Standard Oil measurements. We find that out by taking the matter up with them and requesting them to investigate through Charles Martin & Company the question whether there was any slip-up in the measurements as recorded. The oil is measured in the generator house as it goes to the generators in the works, an hourly record is kept of the measurement of the oil as it is used in the machine. There is a meter there. A report on that comes in to the Superintendent, and it comes down to me once in 24 hours, the oil used by meters, [fol. 1006] and the oil used by tanks. We have a report of the tar recovered and the tar used also, every day.

Plaintiff's Exhibits for Identification 216 to 243 inclusive offered in evidence.

(Received in evidence and marked Plaintiff's Exhibits Nos. 216 to 243 inclusive respectively.)

The Jamaica holder was built in the year 1898. My memory was mistaken about its having been in existence at the time the Brooklyn Union Company purchased the other properties.

[fol. 1007] Each one of the plants is supplied about the same character of coal and oil. There is, of course, some deviation in the the quality of coal delivered by the same companies. It varies in different shipments. We find that to be the case, so that the results obtained might

be different at one time from what they were at another. One shipment is very liable to vary from another, taking it throughout the year. I would not say those differences would be exact figures one way or the other. It would approximate probably to one figure. We get a variation in our results of operation by reason of the deviation in the quality of our materials from one plant as distinguished from that of another. I think that if a plant were receiving a coal of one kind, we will say, and then they were obliged to switch to another kind of broken coal, where there might be a difference in the character, it is very liable to throw out the operation of the generator, and throw the generator house out for a time until they get straightened out again. I mean, it is not a hard and fast proposition that you can always make with a water gas plant a uniform gas, or under uniform conditions. They are varying all the time. Those varying conditions would apply to each plant, to a large extent. Whether they would deviate any more in the Williamsburg Plant than they would in the Metropolitan plant or the Citizens Plant would depend again on whether we could segregate the coal for a certain company and not have to mix it with coal from some other company that had different characteristics. I mean that it is impossible for us to divide our coal from the different coal companies so that we can say here this works takes all of the Lehigh Valley Coal Sales Company coal and the other [fol. 1008] plant take all the St. George coal. We cannot do that for two reasons; first we cannot apportion the amount to bring about those results and secondly the shipments are not made to us at the times that we would like them; we cannot always get the coal as we order it. Take the St. George Coal Company, as an illustration, if that company was delivering us inferior coal, it would probably be delivered to one, or two or three plants; it probably would not be delivered, for instance, to all the works. As to any poor results obtained from operation by reason of the fact that the coal furnished by one particular company is not up to the standard would affect three of four plants, that depends again upon the question whether the plant was running on a particular grade of fuel and for some short time we could not help it and would have to burn some other fuel and upset conditions. I would not call it poor coal

and better coal; it is a different grade of coal, coal of a different character. I think that the coal we buy is as good as can be obtained. If there is any deviation between the various plants to some extent it may be due to the fact that one plant gets coal of a different character than another plant. When I speak of its not being as good a character I think I have not made it clear yet. I think the character of the coal is different, and they have to be treated in differents ways; that is the running of the machine has to be adapted to the kind of coal that is then being used. If a plant were run for a certain time on just one kind of coal, we will say, such as Lehigh & Wilkes-Barre coal, and we have to put in some other coal and the conditions go off—when the Plant Superintendent knows just what he has got to use he can get the better results, he can tell [fol. 1009] what to do with the running of his machines very much better than if he has a mixture. I had a case in mind of a mixture of coal. Our storage had been depleted, and we took any kind and character of coal, that is, the coal as it came from all the different companies, that coal is all mixed up, and the coal that they use is so mixed that they cannot tell what they are getting, and their results will vary on that account. That is one instance where we went out and bought a lot of coal from different producers. It was of course from the same contractors, but the different coals were thoroughly mixed together, that upset the results very much. One of the cardinal points in running a water gas set is to have the generator where the coal is placed in the first place—to have the generator run with the minimum of clinker on the side of the generator, which upsets operating conditions. We find that with a mixed coal of different characters we get more of this clinker condition, and this is what happens: The machine after having been run a certain number of hours falls off in the amount of gas made, and when it comes off, when the machine is shut off to be cleaned, which is done periodically, we find that on the upper part of the wall of the generator we have a clinker which will stick out for about three feet or more all the way around, which not only limits the flow of gas through, but produces a dirty condition of the fire and upsets the operating conditions, that is, it reduces the amount of gas which is generated. Not only does that,

but it means, as a rule, that we use more generator fuel if there is such a condition, more pounds per thousand, and also you would not get as good a figure probably for B. t. u. It makes a worse condition. During 1923, I think, the [fol. 1010] Citizens plant was affected, varying in character of the coal. It is the varying character of the coal that I am referring to. That does not necessarily involve the use of the word "quality." The quality is just as good in one coal as in the other, but the character is such that it makes trouble. It is the varying of the coal that affects it. The reason why the Citizens Plant had a more varying coal than any other plant during the year 1923 was that the coal as received, came from all the different companies from which we buy. One boat would come in after another, and there would rarely be the same kind of coal, that is the same coal from the same company, and that mixture of different kinds of coal as used in the generator gives conditions which I have described. That is not nearly as true of our other plants. We were able to give them more regularly the same kinds of coal than at the Citizens. As I have already said, we put in storage a very large amount of coal during 1923, and we filled the storage space as much as we possibly could, because we had been drawing upon it the year before and we didn't want to get into trouble again. We were able to supply the other works more consistently by one company's coal than we were the Citizens Works. There they had to take coal from practically all of our sellers of coal. The Metropolitan Works was using coke. They were supplied by the Seaboard By-Product Coke Company; they didn't use any broken coal at all, they used nothing else but coke, until about the end of the year. They used coke right through the whole summer starting early in 1923. In the earlier half of the year of 1923, I cannot recall the exact date when the Metropolitan plant first started in to use coke as generator fuel during [fol. 1011] the year, but I think they were using it quite early in the year. The very early part of the year. They started in to use coke, say in January or February, and then used it throughout the year. They used some broken coal but they did not mix it in, for the period. The Fulton Works used coke throughout the entire year. I think we did not begin to use coke in the Metropolitan plant until

April. It might have been about that time. I am not absolutely positive—about January, February and March. They are using coke now. Well, in 1923 there were those two plants that used coke and no others. We were able to take care of the Nassau plant better there, because we could furnish them more nearly with a uniform quality of coal. We furnished them very largely Wilkes-Barre coal, Lehigh Wilkes-Barre. The shipments from the Lehigh-Wilkes-Barre went to the Nassau plant. I would not say throughout the year. It did get other coal at the same time, and that took place at the time of the completion of the new coal storage at the Nassau Works last summer. Then they had some trouble with the variableness of the coal. Just as soon as we furnished some other coal they were confronted with that problem, but to a very much less extent than I mentioned at the Citizens Works.

The Williamsburg Works were using coal, and they are very particular about getting a certain kind of coal, if they can; that is, the St. George Coal Company's coal. They prefer the St. George coal. We gave them the St. George coal so far as we could. We supplied them with other coal, when we could not get the St. George. They were confronted with the same trouble, but not so much as at the Citizens or Nassau. The Equity Gas Company, of [fol. 1012] course, has a limited storage in comparison with the other works, and when a boat of coal arrives at the Equity, they know what kind of coal it is and use it as it is received. They have to use the coal as it comes in, because they have not room for a very large coal storage. They cannot mix it up with other coal because there is none there to mix. I should say the boats sent containing coal of different companies, might vary fully as much at the Equity as it does in the Williamsburg and in the Nassau, but the coal as it is received can be used practically straight, until it is used up. In other words, the superintendent knows what he is getting. Suppose he got a shipment from the Lehigh & Wilkes-Barre, and then as he was using that up, he got a shipment from the St. George Coal Company, he would then be confronted with this problem of variableness in his coal, under those conditions, and he would have to adjust his operating conditions to meet the new character of coal, because he has not got storage room

up there, he has to adjust his operation every time a barge comes in, providing it is of a different character, but he has a better knowledge of how to treat the particular coal that comes in. He knows how he should treat the coal that he has there. We send a boat to the Equity Works at rather extended intervals, because it is a small plant, and we cannot send a boat to the Equity Works unless the previous cargo is practically used up. That is, we might be able to send it a little before that, but that is usually our course, and of course the superintendent in any event makes the best of what he gets. Shipments from the same coal company don't vary anything like as much as this mixture of different coals. The variation between those [fol. 1013] different shipments is not as great as the variation you find between an invoice from one company as compared with an invoice from some other company. The greatest difference takes place when there is a mixture of the two. The shipments successively coming from any given company do not vary appreciably in the character of the coal. The character of the coal is substantially uniform. Of course all coal companies—large coal companies receive their coal from a great many different workings, and by "workings" I mean—the operations where the coal is mined and the shipment of any cargo of coal will be made up of coal from different openings as a rule. There may be some of that coal that is rather more suitable than some other portion of it, and that is the reason again why the character will vary somewhat. I would say that variation is fairly negligible as compared with the variation existing between cargoes of coal from different companies. The oil will vary, too, if you have generator conditions which vary. The oil which is delivered to our works is practically the same character of oil at all of the works. No, I would not say that one plant gets worse oil than another plant, so if there is any variation in the operations of our plant, it is not due to the variableness in the quality of the oil. I am not laying emphasis on the word "quality" to draw a distinction between quality and character in the oil, as I did with the coal. I am carrying out this point that I spoke on previously, that if generator conditions are upset, it will upset also the way that the oil is taken care of in the machines. If there be a variation in the quantity

production at any of these plants from time to time, while that variation may in part be attributed to a variation in [fol. 1014] the character of the coal. It could not be attributable to a variation in the character or quality of the oil itself. We strive to make the same character of gas at each plant so far as we can. I issue the instructions to the superintendents of the plants as to the quality of gas that he should make, so far as what standard he should run to. I told each to run his gas so that he would get an average figure at the works of 580 b. t. u.'s So each superintendent of the plant is bending every effort to make 580 b. t. u. gas at the works. I also instruct him as to his endeavors—to produce the 580 b. t. u's with the minimum amount of oil. I have told him to make 580 b. t. u. gas with the minimum amount of oil required to make gas of 580 b. t. u's. I have not told him to make it or to use a certain stipulated amount of oil. I cannot tie [fol. 1015] him up that way.

I let them use their judgment as to the amount of oil and told them to use the least amount of oil possible to make that 580 b. t. u.'s. The amount of oil would vary from day to day; the amount of oil per thousand would vary from day to day depending upon just the ordinary operation of a water gas set. We couldn't make 580 b. t. u.'s at the plant on Monday by the use of 3.5 gallons of oil, and on Tuesday it would be necessary to use 3.75 gallons for there might be doubt as to his using 3.75 gallons. I don't think he should have to use that much, and I don't think he does. Take 3.5 or 3.6 gallons, there should be a variation of .1 of a gallon in the amount of oil necessary to make 580 b. t. u. gas from one day to another. The reason why is that the making of gas is not an exact science to the extent that you can measure out so much coal and measure out so much oil and then run your machines a certain number of hours and get the same result at the end of 24 hours. It cannot be done. It will vary from day to day. Our superintendent knows how much oil to get in order to make 580 b. t. u.'s and he knows that he would average up somewhere near that. It is not possible to make it exactly. It has got to vary from day to day and from hour to hour. In 24 hours you get an average of what has been done during the day,

and that average will remain constant for the next day. It varies depending largely upon the reasons I have already spoken of, and that is the machine itself, the generator conditions, the conditions of the fire in the machine, the generator fire. If that fires is not cleaned, if it is not in the best condition, if it is not up to the proper temperature, then what happens is that your whole machine, your whole carbureter and super-heater would be out of gear, would be [fol. 1016] out of tune, and you wouldn't be making what we call the blue gas in the generator; that is, the uncarbureted water gas, which would be as good as if you have clean fire conditions, and consequently the other parts of your machine will be upset and you won't get a constant figure from day to day. It depends to some extent upon the efficiency of the operation of the machine, but the efficiency of operation is governed largely by the reasons I have already spoken of, and the fuel conditions. Even if you have the temperature constant and not variable, and if you have the element of cleanliness constant and not variable you could not hope to get an exact figure which would be equal from day to day. It hasn't been done yet. Of course we never have had a constant temperature nor have we had a constant condition of cleanliness. There would be a substantial difference in the quantity of oil used in the condition of the machine itself, as to the length of time it had been run since it was shut down and cleaned out, that is, a water gas set under operating conditions has, as we meet the conditions, about 1,000 hours of running time before we take it off and rechecker it. In fact, even with the best of conditions as to cleanliness of a machine, it would still be necessary to see that a machine was in the best of shape, by properly changing the checker brick and by making any repairs to the linings or the machine itself which would be necessary as you went along. You cannot run the machine steadily. We recover as a by product water gas tar that comes from the oil. The quantity that is a resultant certainly would vary and does. The quality of oil does not vary, but the amount of tar produced will vary using the [fol. 1017] same quality of oil, the tar coming from the oil—one explanation is the heat of the machine itself, and also in the cleanliness of the machine. Certain factors affect the tar. An abnormal amount of tar would be caused by low heat

carried in the generators. That would have tendency to create an abnormal amount of tar. The quantity of tar recovered depends upon your process of recovery. The amount of tar we recover at the plant depends upon the operating conditions of the machine and also the means we have provided of the separation of the tar. Our plants all have separators. They are not all exactly of the same design. I should say that the Metropolitan Works and the Williamsburgh Works were just on a par as to efficiency. I think the other works would come in in about the same way. I think there is not such a great difference between the apparatus for the separation of our tar as between the plants. There is bound to be a difference in another way, and that is that the amount of tar as reported recovered does not always express the amount of tar which has been made, if I make myself clear. The tar has to be separated very thoroughly before all the water will settle out. That might make quite a little difference in the tar, which has not appeared as it was produced in my report. No matter where it appears, I know about it, but I don't know how much there is. The measurements and the amount of tar produced, as measured come to me every day, every 24 hours, as I have testified. There are some cases where there is tar which has or may have a considerable amount of water in it, and we find that we cannot use it, that it is not usable, and we have to put it in another settling tank until it separates. Now, we do not make any report of that until it is usable. Taking it over [fol. 1018] a period of a month, you would not necessarily know the amount of tar you have made during the month. You might have had it for a considerably longer period than that. You might get some tar from that particular tank, but the process of separation is very difficult sometimes. Suppose we started in on our operations on the first of the month, it would be impossible for me to say how long it would take to know how much tar we made that first day. I would know how much tar we made during the month of January from the amount reported from day to day and then at the end of the month I would have the total. I wouldn't have all the actual tar that was made. You might have a considerable amount, but it might not be all separated. It might not be separated in the settling tanks.

Our settling tanks might contain, depending upon which one we used—as much as 500,000 gallons or a million gallons. Taking it over a whole year, there is a way that I could determine how much tar we made during the year from the figures I get. We might have a good deal in the settling tanks, and I might charge in some that was actually made the month before, but that would go in as tar made. That would go in as tar made the first month of the year provided that was the time we would charge it as being made. That would depend again on what I have just said; for instance, you might start at the beginning of the year and might get the tar separated as of yesterday and you would start in just as you have stated and have everything all even. During the year you might have trouble in your separation and find that you could not put your tar back as being made, and that would throw you out. Suppose I took my records starting in with the 1st of January, assuming that it is a normal operation and supposing, I as- [fol. 1019] certained on the 31st of December how much tar had been reported. That wouldn't be very close to the actual amount of tar that necessarily we made during that entire year. It would be what we found we made. Suppose I took into consideration the amount of tar that we have on hand from the first of the year to the last of the year, and found those two things equal because we might have a larger amount settle out in another tank. Assuming the amount you have on hand in the settling tanks equals the amount you have on hand the last day of the year, you couldn't tell how much tar there was in the settling tanks. There is absolutely no way of measuring that. We have taken tar out that looked like very real honest to goodness tar and then we find that we have 50 per cent water. They would generally recover about half a gallon or .5, somewhere around there in percentage to the gas made. .6 of a gallon per thousand, that would be 15 to 16 per cent of the oil used. If you took about 15 per cent of the total quantity of gas oil used during the year, you ought to get a fair estimate of the quantity of tar made, I think that you would still have the conditions that I spoke of, that is, there might be some that was not counted. That is why the figures vary. I think we have recovered nearly 23 per cent. I think 18 per cent is

about what I have in mind. There was one 23 per cent but I don't think that is an average. The average tar was 18 per cent for one year. The average tar recovered was 3 per cent more than my figure of 15 per cent that I thought by and large, for a long period.

[fol. 1620] In the Citizens Works I recovered 23 per cent. That is the amount they made and used. Apparently, there wasn't much in the settling tank there at the Citizens Works. I don't think they have a great deal—that includes all the settlings and it may have included some of the settlings which made it high, too. They may have had some from the previous year, which made this high. It might be said that low heats would cause it. When I saw that figure I tried to analyze the figures. I think that my conclusion was, that was due to the condition under which the Citizens Works operated for that year; they were doing very well, in the results that they did get. It is very difficult to say what did cause the excessive amount of tar. I arrived at the conclusion that I have already stated. That it came from the operating conditions which the Citizens Works had, and also due to the fact that this may not be an absolute figure, in fact, it is not—of how much tar was recovered. I think there might have been some at the first of the year that settled out during the year and swelled this figure. They carried some over from the year previous. The variableness in the coal, generator coal, would affect the amount of tar recovered if you have got a cold machine you are going to have an effect on the tar and the other gas making business. I get reports every day which show the generator operations. I *do* down to the works and I see what the heats are, and I ask the superintendent what the heats are and so far as can be observed the heats as indicated are about as they should be. But that does not show what the condition inside of the machine is. The thermometers are tested. We have a service which goes over that continually. The indications from the pyrometers [fol. 1621] as to the heat in the machines, are as close as they can be gotten. But in spite of that you may have a high heat shown by a pyrometer when the conditions in the machine are not such as to produce the best results. That varies, too. Now there is another thing that varies very much. We will take the Citizens Works, for example,

and this applies to all their results, particularly during last year, that is 1923, and also in 1922. But we will take the last year. They had the condition there which made it most difficult to get reasonably good results. In the first place they were operating at the same time when there was a very great deal of construction work going on, very considerable changes being made, and that interfer-s very greatly with the operation of gassets when you have workmen carrying things out all around and upsetting the conditions, and the men around the machines are afair to operate, they have something on their hands. That is the thing that affects operation. Also another thing I think that shows up at the Citizens Works is this: Due to the construction work going on we were not able to operate the plant at as large a capacity as we would like to have done and as we might have done had it not been for the construction work. If they operate a plant at a higher percentage of its capacity we get better operating costs and everything else. I did not operate the Citizens Plant during the year 1923 to its normal capacity by reason of this construction work going on and I also think that there is not the slightest question about it. That construction work had a tendency to interfere with the reasonably effective operation of the plant. The separators are identical in the Metropolitan and the Williamsburg. We covered more tar [fol. 1022] at the Citizens Work than we did at any other of our works for the year 1923. The percentage of tar is greater. The total amount of tar is not as great as at the other works. Our percentages of tar recovered vary to some extent. The tar separating apparatus at the Metropolitan Works and the Citizens are absolutely the same type of separators. We aim to carry practically the same heats all around. The Citizens, so far as we could discover were carrying the same heats. The machine might not have been working properly. That may have been caused by the reasons I stated before. We tested the pyrometer to see whether it was giving the correct results and we found that it was. We always do that. During the year 1923, The Equity Works had a percentage in tar between 11 and 12; that fell below. The conditions there in 1922, so far as the separation is concerned, I do not think were quite as good as they were in the next year and in this present year.

At the Equity, we have kept a little closer track of it. The equipment is generally the same, generally speaking. We manage to work it so we get a little more tar. We simply kept watch of it all the time. We watched the machines too. We have gotten better results from the machines, and that affects the tar again. I would not say that a more efficient operation applied to the whole operation, but the operation of the machines. I should say so. Speaking about tar again of course the Equity Works in 1923 was operating making more gas and that has a little something to do with the whole business. They made more gas; they were making gas and possibly there were better conditions. They might have gotten a little better results from the coal. Tms design, of course, of the separators at the different [fol. 1023] works must vary somewhat, and the big works have had the most desirable and probably the most efficient separating apparatus. I think the separating apparatus at the bigger works is a little more efficient than the separating at the Equity, because it has a larger capacity and a longer time for the tar to settle out. I came to the Metropolitan Plant in 1893, and at that time they were manufacturing water gas. It was a plant that had been to a certain extent rebuilt in that same year, in the spring of 1893, just been changed over, from a coal gas plant and that was the initial period of their operation in making water gas. I do not know what became of the old coal gas apparatus. That is before my time.

When I visited them in 1893, the Fulton Municipal Works were making carburetted water gas and they continued to make that up to the time and up to the present time.

The Nassau was making carburetted water gas and they had some coal gas capacity as well. They have not got that now. The coal gas capacity has been disposed of and the Williamsburg were making carburetted water gas solely or alone. The Brooklyn were making water gas; they were not making any coal gas when I saw them. They had some apparatus for coal gas but just at that time it was not in operation. I did not see the coal gas at the Brooklyn Works working. I saw the benches and they were all in shape to use. The Citizens were making carburetted water gas solely and did not have any coal gas plant. The Union was making a water gas. They only had apparatus for water

gas; The Equity was not making any gas at that time. They had made some carburetted water gas previous to that time so they had complete apparatus there for [fol. 1024] making water gas. The People's had some coal gas benches and they had a gas holder, and they had the other different apparatus for a coal gas plant. When I first came with them the Metropolitan supplied a district. It started, as I recall it, at Atlantic Avenue on the north and went as far as—beyond 60th Street. The Metropolitan Company had mains and services considerably beyond 60th Street on the south; and running from the Park, Prospect Park, that is Ninth Avenue we will say on the east, down to about the line of Gowanus Canal on the west. That was their territory. So far as the Fulton Municipal Company is concerned I think they covered a much larger area than the Metropolitan. They had more of a roving disposition. The Fulton Municipal supplied gas anywhere that they could get consumers; that is, they supplied it in the territories supplied by the other gas companies. There was a gas war on about that time, and the Fulton were out for consumers. I presume they would put their mains in anywhere they could get their gas consumption. The Citizens had the district south of the Canal and the Red Hook section, and they went to Atlantic Avenue. They did not infringe, then, upon our territory. They went down on the south, they went down Hamilton avenue, or in that direction. As to the Nassau, I cannot tell exactly what territory they supplied, because it is a very irregular line, and I can hardly describe it . The territory that was supplied by the Williamsburg was the Williamsburg Section. It was the old village of Williamsburg. The Brooklyn Company had a district, too. It would be more the district contiguous to the Brooklyn Works. The Brooklyn Works was situated at the foot of Hudson Avenue and the river. The Brooklyn Edison Company have a plant there, building now, but [fol. 1025] the gas plant has been done away with and the property, that is the land, was sold to the Brooklyn Edison Company. I do not recall the date when it was done. The Brooklyn Company were making water gas at the time they disposed of the property. They were making water gas at the time of organization and the Brooklyn Union Company disposed of the old plant that was formerly run by the Brooklyn Gas Light Company.

March 7, 1924.

[fol. 1026] ROBERT W. BUSH

Cross:

In looking over my testimony yesterday I find I have omitted three holders, in the statement I made, these holders having been sold by the vendor companies, and I should like to say which holders these were. I will say also that I found this error myself in my own testimony.

One holder at the Citizens Works, 5th and Smith Streets, capacity 246,000 cubic feet; one holder at Kent Avenue and North 12th Street, which is the Williamsburg Works, which has a capacity of 315,000 cubic feet, and a second holder at Kent Avenue and North 12th Street, which has a capacity of 306,000 cubic feet.

In looking over my testimony, I found that the answer which I made, which was made offhand from memory, was, in a general way pretty near right, but there were periods in the middle of the year when the Metropolitan did not take coke, but they did take coke the first part, and some in March. They used only a very small amount in January and then they started in using it again in August. The coke used would be over fifty per cent and the coal used would be less than fifty per cent at the Metropolitan Works. The latter part of the year they used practically 100 per cent coke at the Metropolitan Works.

Speaking about the amount of water gas tar recovered at the various works, I think the Citizens Works was a little greater for 1923 than the Nassau Works. The percentage recovered. I consider the Nassau Works was not quite as big as the Citizens Works. The percentage [fol. 1027] of tar recovered at the Citizens Works is 23 per cent. The means of collecting the tar at the Equity Works is not insufficient for an economical recovery; that is, for a normal recovery. That is another way of saying that it is sufficient. * * *

15 to 16 per cent in my opinion, is the average recovery, I think our average for the year before this last was 16 and a fraction. They recovered less at the Equity Works than they did at the others, for the years 1923 and 1922 because I believe that more tar was deposited in the holder at the

Equity Works and not reported as used. The reason I have not spoken of that before, I believe that more tar was absorbed in the—more tar was deposited. I don't mean to say that I believe so, but it is a case in fact. More tar was deposited in the catch layers, as we call them, in the purifying boxes at the Equity Works. The tar was absorbed by a layer of shavings which is placed over the grids in the purifier. It is put there for the purpose of keeping tarry matters out of the oxide or purifying material which we use to purify the gas. In the case of the Equity Works, there was more of a deposit of tar in the shavings and there was more of a deposit of tar in the holder at the Equity Works which was not pumped out and did not appear entirely in these figures, because there was no particular reason for pumping it out. The operation of the [fol. 1028] works was such that it was better for them to let it rest and settle. I could not tell how much there was in that holder, but I know there was a great deal. It was a combination of tar and water, as I have spoken of before, and as I have explained before, it looks like tar. You would think it was perfectly good tar, but it is not, and it is not suitable for use. The tar was deposited in the holder at the Equity Works. I know there was some tar there. It has been deposited in tanks, as I stated, in the other works, too. So the same thing is true, but it is certainly true at the Equity Works because I know it myself. It is a similar proposition, but not the same. In other words, there would not be the same amount of tar carried over in one works that there would be at another. It depends upon the operating conditions. I think in the case of the Equity Works there was certainly a very large amount of tar in the holder. I know the tar was there inside the holder because we can test to see; that is, we can test to see what the combination of the tar and water is. We cannot tell what the pur- tar is. I know there is a great deal; that is the only way I can express it. That condition was also the same the previous year. They had that same condition. I am talking of the relief holder which is at the works. That is the only holder we have there. There is always, of course, much more of a deposit of tar in a relief holder than there is in a commercial holder. The deposit of tar very largely takes place in the relief holders at all of the works. There is no tar in the

storage holder. We do not get tar from the storage holder. The commercial holder is the same thing as the storage holder. [fol. 1029] There are two classes of holders; one called the relief holder and another called the commercial or storage holder. Commercial and storage are two names for the same things. The relief holder is simply a holder which is acting like a governor. As the gas is made, this holder goes up and down. A large part of the tar is deposited in the wash boxes of the generators before it has reached the relief holder. Tar goes through the condensers and we get tar there, in the condensers and in the shavings scrubbers and in the tar extractors. That is the first piece of apparatus after the gas leaves the exhauster. The gas goes into the relief holder and it branches off and goes through the condensers. It is see-saw. Sometimes it might go to one first, and sometimes to the other. Tar is deposited from both the condensers and the relief holder. It is then taken up and the gas is then pumped by the exhausters and goes through the tar extractors which are the outlet of the exhausters; that is the next place where tar would be deposited and the next place along the line would be the shavings scrubbers. That would be practically the end, with the exception of where a slight amount is taken out in the lines. The gas is on the way to the storage holder or commercial holder. In speaking of the gas as coming from the generator house and going first into the relief holder and at the same time branching off to the condensers, I omitted the second time to speak of the tar in the wash boxes. No matter which way it goes in the first instance, it all goes through the wash boxes, but some of it may come through the relief holder and some through the condensers. If it [fol. 1030] goes *goes* through the relief holder, it finds its way to the condensers. Some of that goes that way, some of the gas would come back and go there. If it finds its way to the condensers, then it goes to the relief holder but the relief holder acts as a check. Some of the gas goes through that relief holder before it reaches the condensers. All of the gas, whether it goes to the relief holder or not goes through the condensers. It goes to the shavings scrubbers, after having been pumped by the exhausters, and after having been through the tar extractors.

I gave instructions, about May 1st, 1923 to the manufacturing superintendents of the plants to make 580 b. t. u.'s.

The works were making candle power until October 1st, 1922, and then from October 1st, 1922 to May 1st, 1923 they were making 600 b. t. u. gas. We started 600 in the winter of 1922 and 1923. January 1st, 1922, we were making a candle power gas of the standard 22. Possibly I have not made it sufficiently clear. I will, however, on January 1st, 1922 say, we were making gas of more than 22 candle power at the works and the standard was a candle power of 22. The standard changed October 1st, 1922. From January 1st, 1922 to October 1st, 1922 without intermission, we were continuously manufacturing gas having more than 22 candle power. On October 1st, 1922, the new standard went into effect.

"Q. And what did you make?

A. We did make a b. t. u. gas.

Q. What standard?

A. The standard being 537 b. t. u.'s.

[fol. 1031] Q. At the works?

A. That would be 537 standard daily average of gas.

Q. At the works. October 1, 1922, you ceased making gas having a candle power in excess of 22 and began manufacturing gas having a b. t. u. standard of about 537 b. t. u.'s?

A. Yes, sir; at the works, daily average.

Q. How long did that continue?

A. That standard continued——

Q. I do not care so much about the standard, I am asking what you continued to make. You continued to manufacture there?

Mr. J. A. Dykman: That is just where the witness misunderstood you, sir, and the record is going to be wrong. You are talking about standard, Mr. Bush, and what the Master wants to know is what was the b. t. u. content of the gas actually made.

Q. I am not asking you what the standard was or what you were told to do, I am asking you what you did. Let us go back again to avoid any misunderstanding. January 1, 1922, you were actually manufacturing gas having a candle power standard of something in excess of 22. No matter what you were told to do or what the law was or what the Public Service Commission said, that is what you were doing?

A. That is the gas that we made.
Q. Yes.
A. Was more than 22 candle power.
Q. Yes.
A. For that period.
Q. And that continued without change until October 1, 1922?
A. Yes, sir.
Q. What change was made October 1, 1922? Do not bother about any orders you received from the Public Service Commission or any laws that were passed. Just keep your mind on your plant. What was it you were producing October 1, 1922?
A. Shall I tell you what we did?
Q. That is the thing.
A. We discontinued making candle power tests and we started in making b. t. u. tests."

[fol. 1032] Of the standard which I will give you the average of for each month, for the month of October the average of 608. That is October 1922; November, 609 B. t. u's; December, 602 B. t. u's. The average of those three months was 606. On January 1st, 1923, we did not make any material change. We produced an average of 595 B. t. u's and in February 1923, 597, 598 in March, 592 in April, 586 in May, 582 in June, July was 582, August 583, September 581, October 582, November 582, December 581. The month of January, 1924 was 583 B. t. u's and the month of February was 582 B. t. u's.

The costs of the coal vary in accordance with the plant, speaking of generators; that is, the cost is less at some one plant than it is at others. It differs between different plants. The great reason is that no two plants will make gas at the same costs. If you had two plants exactly the same in design, with the same apparatus, and you had just as good an operator at the head of the plant and you had just as efficient men all the way through, and you made gas, with an equal amount of gas, when you got through at the end of the day, the 24 hours, the results would differ in those two plants. The cost delivered in generator fuel differed at the different plants due to the difference in prices of the shippers. The coal we buy is not all of the

same price. There is not any wide variance in the cost or the price of coal. It is not a wide variance, but the different companies from whom we buy coal do differ slightly in the price. The cost of delivery is practically the same. It generally runs about 40 cents boat freight per ton of coal, and occasionally gets as low as 35 cents. Take the Lehigh & Wilkes Barre Coal Company, they charge us a certain [fol. 1033] stipulated price per ton. That particular coal as delivered to the different plants varies in price when it gets there. It will cost more. It costs one plant more than another to this extent, that coal which is in within lighterage limits, which means coal delivered to the Nassau Works or the Williamsburg Works, has no additional charge for towing except as we might have to transfer the boat around ourselves, as happens. But delivered up Gowanus Canal and Newtown Creek there is an extra charge for towing of about 5 cents per ton. There is no other differential. The mine price of these different coal companies differs somewhat. Take the Lehigh & Wilkes Barre, for instance, the freight rates would be the same. It does not all come in the same port. There are other charges go on to the cost of the coal; that is demurrage, which we have to pay and which is not a fixed figure. I mean by that if a boat is held at our works over a four day period that the consigning towing company will charge us for demurrage, and that goes into our cost of coal. That element of demurrage prevails at some plants to a greater extent than it does at others. At the Canal Works, we are more apt to have demurrage because the canal is a congested place and it is more difficult to move boats. It would be more so, I should say, in the Gowanus than at the other plants.

During the summer of last year, 1923, we were rebuilding the coal storage at the Nassau Works and putting in an entire new storage and a new method of coal handling machinery. In order to keep that works going we had to quit unloading any coal alongside and transfer from another point to the works at the Nassau during the summer. We got it usually from a point on the Wallabout Creek. [fol. 1034] It is not very far from the Nassau Works. We had a piece of property there that we stored coal on. We trucked it there, and then later on when we could and when

we got in shape we boated some, at the end of the period. That made the coal at the Nassau Plant during the year 1923 unusually expensive because of our construction work going on there. In the case of the Williamsburg Works, we have had considerable demurrage there on these coal boats, for this reason, that the Williamsburg Works is situated between two plants of the Standard Oil Company. The Williamsburg Works extends from North 11 to North 12th Street and from the River up. The space between our pier and the Williamsburg Works and the Standard Oil Company on North 12th Street is comparatively small and there is a great deal of congestion there. We have boats coming in and we cannot get them out as quickly as if there was not so much congestion, so that we do have some demurrage or considerable demurrage, in the Gowanus Canal plants and also in the Williamsburg and we have it also at times in all the works, that is, we do not have it to the same extent that we do in the plants on the Gowanus Canal and also in the Williamsburg Works. It is different in different plants, but it does obtain in all cases, in all plants, to a certain extent. I also speak of the Nassau Works, about having trouble there at certain times with demurrage. There was demurrage on some cars as the Nassau caused by construction. The demurrage in Gowanus Canal plants is caused by the congestion of the canal and the demurrage at the Williamsburg Works is caused by the fact that our dock is in a congested district there, between the two Standard Oil plants, and at the Nassau plant our demur-
[fol. 1035] rage was caused by reason of the construction of our coal pile. We also had additional time to pay for unloading at the Equity Works due to some demurrage for boats going there, congestion of boats at the unloading point, and we have to wait our turn to unload; there is quite a little, taking into consideration the size of the plants, of course it did not amount to so much money or anything like as much as at the other places. It costs 5 cents a ton more to deliver coal to the Nassau than it does to the Citizens, that is towage up to the Gowanus Canal. The cost of handling also goes into our cost of coal, on our books. There is a difference in the cost of handling at the different works. Those figures would differ somewhat. Offhand I do not recall now in which one the cost of handling would

be greater. The cost of coal alongside varied from approximately $10.62 to about $11 during the year 1923. That is not on a given contract, that is taking the different contracts, giving the highest and lowest. I have my figures by companies, showing what costs are, but I cannot tell how much it differs at the different plants. The cost of coal for delivery from the Chapman Docks to the Equity Works would be somewhat more than it would at other works. The cost of delivering the coal from the dock into our stock pile is practically the same at the Citizens, Williamsburg, Nassau and Fulton. We have practically the same coal handling apparatus at each of those works and it is all done by machinery. We have installed new apparatus at most of the plants; at the Citizens, at the Metropolitan, at a little earlier date and at the Williamsburg has been in some time. The Fulton has an unloading hoist the same as the others [fol. 1036] and that has been in some time. The Nassau has been changed during the last summer and made to take the bigger capacity and at the Equity the coal is unloaded at the Chapman Docks and is delivered to our storage pile at the Equity Works over a trestle. The Chapman Docks company unloads it and send it over this trestle to our plant. The trestle belongs to the Chapman Docks. We have an agreement with them that they will do at the price. We have taken coal from the Chapman Docks to the Equity Works for a good many years. There is no agreement in writing, just an oral agreement. I made the oral agreement with them several years ago. I do not remember the exact year. I had talks with them since that about the cost of it, or about their methods of anything else. That talk was two years ago. They have not said anything to me about it since that I recall. They are charging us forty cents a ton for unloading and delivering all kinds of coal into our coal pile. They make no distinction between broken and buckwheat, or bituminous coal. To get our coal from the dock at the other plants into our stock pile would not be as much as to get it into the storage pile at the other plants. To get it into the storage pile would be the figure I have given you before. At the Equity it was forty cents a ton. I haven't got that figure for the other works, but I think it would be approximately about one-half. It might be quite a little more than that, twenty cents a ton. There is a difference

between our cost of getting the coal from our stock pile to our generator houses in the various works.

When I first came with the Metropolitan Company they had two water sets, and they had seven benches of sixes, [fol. 1037] which were twenty feet through retorts, each bench twenty feet long, and with mouthpieces on each end of the retort. That is known as a through retort. They have ceased operating their coal gas plant prior to my connection with the company. The coal gas benches that were used for making the carburetted water gas, when I came there, were all of the benches that we had in use; we made water gas or blue gas from the generators, and that gas was mixed with oil gas made from the retorts. We were using the oil gas apparatus, those retorts were fittted up in a special way to use to make oil gas. The water gas set didn't have any carburetor, it was a straight water gas machine making blue gas. We called machines, a water gas generator. It was practically the same as a generator of the present time except that there was no carburetor or superheater connected with the generator. The gas was fixed in the retorts. The oil gas was fixed in the retorts, the oil gas having been passed through a coil of pipe in the retort and gasefied therein, and then flowing the length of the retort and out to the hydraulic main where it mixes with the blue gas. The blue gas was mixed with the oil gas in the hydraulic main, which was the outlet of the oil gas from the benches. We made a number of experiments and we tried putting the blue gas through the retorts with the oil. We tried it that way, but we found that the best way to do it was to keep the blue gas and the oil gas separately. Then they united in our hydraulic main. All there was to fix was the oil gas. The blue gas was mixed with the oil gas. The oil gas is fixed with the blue gas in the carburetor and then it passes into the superheater, gets the final fixing in the superheater of the machine. Those two [fol. 1038] generators that we had at the Metropolitan plant are about ten feet, I think. I do not remember just the height, but they were very good sized machines. They have been done away with since, taken out and retired. I don't know what became of them. I haven't seen them since the Metropolitan Works was rebuilt. The coal gas retorts benches were torn out at the time the Metropolitan Works

was remodel*l*ed. When the Works were remodeled this was done after the works had stopped making any kind of gas. Up to the time they stopped they were making gas by this method I have just described and then they stopped and started on a plan of remodeling the Metropolitan Works in 1910; sometime after I came; we started in 1909.

The Fulton Municipal had six 12 foot machines, approximately. The machine was a single shell. They made water gas. The six are not now in existence. They had other benches or retorts for making the oil gas. I don't know what they had, I don't think that some of the benches had been used possibly—that is, they had been used, and I think they were in that position, but the particular benches that were used at the time I was there were made for oil, there was no coal gas. The setting was for oil gas, rather than the coal gas. The manufacture of water gas separately has been done away with in the Fulton Municipal. That equipment has been done away with. The Metropolitan and the Fulton Municipal made oil gas and they mixed it with the blue gas and that made a carbureted gas.

[fol. 1039] The Citizens had three water gas sets, approximately a 12 foot, ten to twelve feet. They were just the generators alone. They had the retorts or benches for making the oil gas too. That has all been done away with.

The Nassau had four water gas sets. They were the generators for making blue gas only, and I should say the diameter of the machine was about 12 feet. They *maid* oil gas too. They made any coal gas at one time. They had facilities for it when I was there. All of the Equipment had been done away with at the Nassau the four generators and the oil gas machinery and the coal gas machinery.

The Williamsburgh Works were making water gas; they also had some coal gas equipment. The principal production was the water gas. They had a little different type of generator from what the other works had. They had an installation there of the so-called Loomis process. The Loomis process was different in the way that the gas was made in the generator. All the generators that we have been talking about, and even those that we have today, when they are being heated with the air blast, the blast goes up through the coal of the machine, and on the Loomis process that is reversed and the top of the generator is open and the air is pulled down through the machine, and then it goes

through the rest of the apparatus. They made their oil gas in benches. They had eight generators, about 12 feet, at the Williamsburgh. All that machinery has been done away with.

[fol. 1040] The water gas plant and coal gas plant of the Brooklyn Gas Light Company has been entirely dismantled and the property sold to the Brooklyn Edison Company. They made water gas and coal gas in about the same method as the other companies and were making gas when I was there; that plant, after the consolidation, was not increased in size to my knowledge. Right after the consolidation, some of the plants were shut down. I would not say that the Brooklyn Gas Light Company made all the gas. Some of the other works made more gas too, right after the consolidation. I think, the Union was shut down. I do not recall the dates that those works were shut down. Some of the plants were shut down and the Brooklyn Gas Light Company worked to a greater capacity. In order to take up the difference the other works would naturally increase in their make, but the point I want to make is that the capacity of the Brooklyn Works was as I have stated it. They had this capacity, although they did not use all of it at a certain time. The Brooklyn Gas Light Company had four twelve foot in diameter generators. They make their oil gas too in benches and they also had a coal gas capacity there, and made coal gas there. They did not make it as late as 1895. They did make it up to about the time of the change in ownership of the companies, the consolidation about up to 1895. They were making coal gas and then they were in condition to make the coal gas after that time, and it is my recollection that for a short period they did make it.

The Peoples Company had some coal gas benches and they were not being operated. They had no water gas ma-[fol. 1041] chinery at all. That plant had been shut down for some time before I came there. They also had a holder there. I am not sure that Mr. Dykman was a director of that company. All that coal gas equipment that was in the Peoples Plant has been done away with and the plant is not in existence, dismantled entirely. I believe the property on which the plant stood was sold.

The Union manufactured water gas. They had two of them, about ten feet. The plant has been dismantled with

the exception of the two holders which remain there, and an old governor house.

The Equity was not operating when I was there in 1893. They had the entire works in perfect order and condition, the whole equipment. That was a straight water gas plant. They did not make any oil gas such as I told about. They had eight foot six machines. That is a trade name. An eight foot six set, and they had four of them. Those are the ones that are being used there now. The same machines are being used with some changes in the method of working. The shells have been rebuilt to an extent. There is no period that I think of that I could tell you would be the time in which we would have to make such a repair to a water gas set, since the organization of the company in 1895. We put a new shell on the set at the Nassau Works approximately three years ago. I do not recall how large the sets were that we put the shells on. They have been in use for some time. I could not tell you that from memory, how long approximately, since the organization of the company. We have put a new shell in at the Williamsburgh Works; on one of the old machines at Williamsburgh, and we also made extensive changes on another machine at the [fol. 1042] Nassau Works. I mean by that machine, that was one on the three shell set, and it was made into a generating machine. I mean that there was another machine at the Nassau Works which had extensive changes; that is, the generator shell was practically rebuilt. That applies to the three shell machines, not to the Williamson sets. We put new shells on two machines at the Nassau Works; one at Wililamsburgh, and those three machines we have put new shells on since the organization of the company. There were four new shells put on the Williamson set at the Nassau Works last year, 1923 and there — four shells put on the Williamson machines at the Citizens Works last year, 1923, that is in addition to the three that I mentioned to you previously, and the other three that I mentioned related to the three shell machines, I am talking about Williamson machines.

In speaking of the changes to the machines at the Equity Works I said there had been some changes made there. There were two generators there which were changed. The generator shells were changed, and for this reason:

The machine was rebuilt to make a little more gas, the set. It is not a question of the machine not being able to operate at all, or being worn out, but because we got more gas out of it by the improvements. It was a change by which we got more gas. The two machines at the Nassau Works, the two three shell machines, and the one at the Williamsburg—we put the new shells on those machines because we wanted to use a round generator instead of an oval type generator on those machines, and by putting in the round type generator, which is the accepted way to do it, we figured that we would get a little more capacity and we did get it. So the rebuilding of the machines, the three-[fol. 1043] shell machines at the Nassau and Williamsburg and the Equity, was done for the purpose of increasing the capacity of the machine; that was the thing that we had in mind. There were two machines that were reconstructed there. That makes in all five three-shell machines, that we put new shells on. About the Williamson machines at the Nassau Works and the Citizens Works, the reason for putting new shells on those was to increase the capacity of the machines. The shells that were on the machines were in good operating condition when we changed them. They did operate; we were using them to operate, but at the same time the machines would have required considerable repairs if we had kept them as they were. It was my judgment that we should change the machines altogether, change the generators and enlarge the connections to the machine, and get a greater make of gas, and it seemed to me the thing to do was to have it done all at the same time. Previous to that, any repair of a minor nature is taken care of just as soon as it is required of course. We always have repairs of water gas sets. From recollection, I should say that the generators at the Citizens Works were put in somewhere around 1903; I think the Citizens somewhere around 1905. The Nassau Works was rebuilt after the rebuilding of the Citizens, but the machines on which the generators were changed there, that is the Nassau three-shell sets, had been put in quite a long time previously. The four Williamson machines at the Nassau, the ones that we put the shells on were put on somewhere around 1907, I should say just from memory. If you want the exact figures I would like to give them to you. Then the shells on those eight ma-

chines, the four at the Nassau and the four at the Citizens, [fol. 1044] the Williamson machines, have been operated for a period of about eighteen years before this condition arose where we thought it was advisable to change the shells and to put on new shells. I do not recall it whether we have other Williamson machines now being used, that have been used for a period greater than 18 to 20 years. We have machines other than the Williamson machines which were built before 1904 and the original shell is still on the machine and in good operating condition. There would be two at the Nassau Works and there would be one at Williamsburg, and of course you are bearing in mind that I do not mean that the whole set was remodeled in these cases. I am speaking of the generator. The shells in all if those five cases, on all of the machines, were changed on the generator. The shell on the carburetter and superheater was all right. The shell on the generator would have a tendency to give way sooner because it is up against more trying conditions as far as wear and tear goes. Repairs to the hot valves and to the purge caps, to the connections, to the hydrogen pipes, to the steam piping and valves in connection with the machine are repairs which have to be made from time to time and the recheckering of the machine is a repair which has to be done. At regular intervals, and frequently, and the lining of the generator particularly has to be kept in good repair, and that needs frequent attention. The more frequent repairs we have to make to a generator is the recheckering. We do not put in checker brick inside the generator. That really does not affect the generator itself, it only affects the checker brick in the carburetter and superheater. To reline and set is a period that differs according to circumstances. It varies. There is no hard and fast time. It [fol. 1045] might be that a generator would require re-lining in a year's time and it might require even a shorter time than that, and it might go a long time. It is a thing that you have to take hold of and make the re-lining wherever it is required according to the conditions. It is because of the great heats. The heats are higher in the generator than in any other part of the set. The excessive heat carried in there is not the cause for the re-lining; it is on account—very largely of the abrasive action of the clinker

in the generator itself. When this clinker is formed, it has to be removed before the generator can be put on, in order to have it work properly and that means every time that you remove the clinker, you take off a certain amount of the fire brick of the lining and the jarring of the machines, bearing down, as we call it, affects the lining, so there is no fixed time for a period over which the lining will be all right. Of course, small repairs to the lining are made and the machine comes down for recheckering. I cannot say what is the shortest time that it has been necessary to reline a generator after a generator has been first put into use; an absolutely new set, it might be a year, I would say. I would expect with the ordinary conditions and with a suitable fire brick, that the machine should certainly last a year. There might be repairs due to that—that is, relining—which would come more at one time than at another. I mean that the repairs might be bunched and you might at one particular time, one particular month in the portion of the year, more repairs than you would have at another time. You would have to take over a period to find out how long. I have in mind a period of just a year that is, in so [fol. 1046] far as the relining, and in so far as the general things that happen to a machine are concerned about making this actual repair of putting on the shells. You would not expect to do it once in two or three years. When we do a job of that kind it is a repair that you expect is going to last you for some time. We would endeavor to make repairs, if they were necessary, if we had a smaller make of gas and we didn't have other work which we would have to do; if there is some construction work going on at the plant, necessitating the non-operation of the machine, that would be a good time to repair it, provided it needed repairing and we take advantage of anything like that. It is my experience, when great construction work is going on at a plant, such as the Citizens Works, for example, that the quantity of repairs that would be made would be greater than it would if there was not construction work going on. When we make any repairs, I have this to do with it; I know what the work is that has been done, and I get a report which comes down to me and that report may have on it the charge for the work in question. That is a matter, however, that goes through to the auditor, and if the charge

has been specified as it comes through me, it is through an order from the auditor. I can simply say what the work was that was done. As to why it was charged to a certain thing, I cannot tell; that is not my province. I know the nature of the work, but I don't know from the accounting end of it as to whether it shall be deemed to be a betterment or an addition or a repair.

Now, at the Citizens Works in 1923 I had a work order, there which came through to my attention, for replacing the [fol. 1047] steel shell and lining of the generator portion of the four Williamson generators. My attention was not specifically called to the amount of money that that cost. At the Nassau Works we also replaced the steel shells there to the four Williamson generators and increased the size of our hydrogen pipe; we did other things. The purge valve, the hot valve, and many other things at the same time. We also relocated the steam and hot water lines there in the Williamson generator house. By reason of those changes the work at the Nassau Works increased the capacity of the Williamson generators. In 1923 at the Citizens Works, we replaced the connections and we changed the size of the connection, so that also increased the capacity of the machines. That and other things which I have spoken of. In other words, the Citizens Works changes were, so far as the machines themselves were concerned, about the same in the Nassau and Citizens Works. The capacity of the four Williamson machines at the Citizens Works and at the Nassau Works is shown so far to have increased about 200,000 or 300,000 cubic feet of gas per machine. The make per machine at the Nassau Works over a period was about 29, nearly 30. That is a figure for the year. I cannot give an exact figure. For the six months operation the Nassau Works show the make per machine to be 2876. That is, 2,876,000. That was prior to the change. After the change, for the month of December, the Nassau Works made 3,180,000. They increased it between 200,000 and 300,000. The Citizens Works showed a make per machine for a six months period based on all the conditions I have spoken of between 2,700,000 and 2,800,000; about 2,700,000 we will say, and for the month of December, the sets showed 3,037,000; that is [fol. 1048] the make per machine, between 200,000 and 300,-

000. Generally speaking they were able to make that much additional by reason of these so-called repairs, but I cannot absolutely segregate the Williamson sets from the other sets that were running. These were the figures for the sets that were running for those periods. The present capacity of the Citizens Works is 27,200,000. The maximum rated capacity three years ago in 1921 was 16,000,000. In 1920 the Citizens Works had a capacity of 8,500,000 and then we increased it to 16,000,000 and now we have increased it to 27,000,000, so we have very nearly tripled the capacity of the Citizens Works since 1920. Approximately that figuring from eight, it is a little more, a little over that. The waste heat boiler at the Metropolitan Works has been there for some time but it was not an old one. That was put in shortly after the plant was rebuilt. That has connections to two generators. It is so situated that it will take care of two generators that are on opposite sides of the house, or between them. It sets up higher than the generators. The bottom of the boiler settings would be approximately twelve feet, I should say, above the generators. That is an approximate estimate, I guess that would be a little less than twelve feet and possibly nearer six or eight feet. I do not recall the figure exactly. I think it is about six or eight feet from the top of the generator to the bottom of the waste heat boiler. The waste heat boiler has a capacity of 335 horsepower, using liquid fuel; in other words, tar. The boiler of course is a water tube type B and W boiler, and it is at the same dimensions practically as an ordinary boiler of that type. Those are [fol. 1049] attached to the Williamson sets at the Metropolitan Works. That has been in use for some time. I recommended the installation of that waste heat boiler. That was, as I said, after the building of the new plant, and I would say it was about 1912 that boiler was put there. We have a total of nine Williamson machines. We have there waste heat boilers attached to other machines making four in all. The boilers are all built, they are completed, but all the attachments are not finished. That is recent. We installed three more last year. Since 1912 we have had one waste heat boiler attached to two Williamson machines. Seven machines did not have waste heat boilers attached to them from 1912 down to last year.

There are only two of them to which are attached the waste heat boiler. I recommended since 1912 and prior to our recent installation the installation of the waste heat boilers to attach to the other Williamson machines. When we first installed this in 1912 it was more or less of an experiment with us. That was the first one we put in. They had had them in use at the Astoria plant of the Consolidated Company for years prior to that and they had them in at Astoria. They had them on sets in Philadelphia and on sets in Newark. They were not the same type of boiler. The plant at Astoria was built about the same time that the Metropolitan was rebuilt. In other words, about the time I spoke of. The Kings County Lighting Company did not have any waste heat boilers at that time. The only company operating here in the Metropolitan District that had waste heat boilers was the Astoria Company as I recall. I examined into the question of the advisability of installing waste heat boilers at that time and came to the [fol. 1050] conclusion that I would try it out; I also recommended the installation of this one waste heat boiler attached to the two other Williamson sets and then watched its operation. I came to the conclusion that for only one waste heat boiler it was not a satisfactory proposition. It was a good thing to try out, but so far as getting results is concerned it was not a paying investment to run one boiler. I did not recommend the installation of others, with only one boiler you could not even get figures on which to base all results, as to what you might obtain. If you had further installation; then I took up the question as to whether it was advisable to install others. I did not make any recommendations for increasing the number of boilers at that time because I thought there were other matters that I would rather give my attention to. That time was not the best time to install further boilers, and we did not do it for that reason. We thought that it would be advisable to put in these other kind of apparatus before turning our attention to the waste heat boiler proposition. The plant has increased very materially since 1911. We abandoned the idea of installing waste heat boilers, or further waste heat boilers, at that time because we thought that there were other matters which deserved greater attention such as the rounding out of our plant as a general

proposition, putting in such apparatus at different works as was required at the time. The waste heat boiler proposition at the time the boiler was put in at the Metropolitan Works was more or less an experiment. It took us quite some time to find out much about it, and in considering the installation at Astoria, we found it very difficult, in fact we were unable to get definite figures as to what the waste [fol. 1051] heat boilers were saving. It was impossible to get them. They did not know themselves; they could not tell me. Even over at Astoria, that matter went along until about the time of the war. When that started we had in mind that we might do something further with the waste heat proposition. Then I took the question up again but then the war started and everything was upset, and we let it go. Then we took it up last year and put in those boilers. We have been rounding out our plants for sometime that covered the period of time up to the present. In order to obtain increased capacity we need certain additions at different plants. I did not think in 1912 when you temporarily abandoned the idea of installing more waste heat boilers that our plant needed more capacity, needed more water gas sets for more than you did waste heat boilers. When you speak of rounding out a plant it means the addition, say, of a condenser, if you are short of condenser capacity, or if you are short of generator capacity, putting in another generator or putting in another exhauster or work of that character. The plants are pretty well rounded out now. My attention was particularly directed to the waste heat boiler proposition and then you considered again the advisability of installing waste heat boilers. I got the information as to whether they were an e-onomical operation or not which was to the effect that there was a saving which might be expected from the waste heat boilers, but just what the saving would be was problematical, and I thought it would be a wise thing to have a complete installation of waste heat boilers at the Metropolitan Works and so determine for ourselves just what the economy would be. In the meantime while [fol. 1052] we were rounding out our plants other gas companies had installed waste heat boilers. The Astoria Company had waste heat boilers. They put on more and in the meantime I think Kings County installed waste heat

boilers. I did not confer with them to find out how they were operating. I was trying to find out whether a waste heat boiler is an efficient or economical thing to have. I went to the Astoria Works, the place where I thought that I would be most sure to get the information. I talked with Mr. Lawrence, Mr. Woods and a number of other people. They could not tell exactly whether that was an economical operation. They felt that there was a saving. I didn't talk with the Kings County Light Company men for the reason that I felt I went to the best place to find out. That was the only place in the Metropolitan District, other than the Kings County, that I knew of. I did not inquire outside of the Metropolitan District at that time. I came to the conclusion that it was advisable to install some more. Last year or the year before I took up the question again of the advisability of installing waste heat boilers. There we finally installed three more, so we have a total of four waste heat boilers at that plant. They are not in operation there now. The old one is ready to be operated. During 1923 we did not operate it and we are not operating that at the present time. There were no waste heat boilers in operation at the Metropolitan Works in 1923 or any of the plants. At the Citizens Works they had two in operation. We have completed the installation at the Metropolitan Works of three more waste heat boilers. Their connections are not entirely completed. They will be in a condition to be operated this spring. Within a month or so [fol. 1053] we will have in operation at the Metropolitan Works three new ones and the old one. They will be attached to two generators in each case. That will be eight generators. There will be a connection from each waste heat boiler to two generators and that will take care of eight generators. At the Metropolitan Works we have nine generators. There will be still one of them without a waste heat boiler.

Over at the Citizens Works we have installed three waste heat boilers which are in operation now and have been since last year. They went into operation in the latter part of the year 1923. We have three of them at the Citizens Works. They are each attached to two generators, that would be six generators that I have connected with waste heat boilers. We have four generators that are not connected. At

the Williamsburg Works we have not any waste heat boilers and none at the Nassau Works, the Fulton Works, or at the Equity. Our waste heat boilers installation has been confined to just two works, the Metropolitan and the Citizens. The construction of waste heat boilers would entail a change in the generator house. The principal reason why they have not been installed is, as I stated before, that we felt that we should make the installation and determine for ourselves what the economy would be. We are still experimenting. I don't think they have been in use by gas companies quite as long as twenty years. It would necessitate quite a change, a reconstruction of the generator house, in order to install them in the other generator houses. We would have to strengthen the construction in the generator house itself in order to bear the additional weight of the waste heat boilers. Of course the height of the roof would have to be raised. That would mean a new roof. [fol. 1054] The Metropolitan Works was laid out originally with such construction that waste heat boilers could be installed later on. I was there when they built the generator house. We foresaw the advisability of constructing so that we would be able to make an installation of waste heat boilers later on, should it seem to be advisable. The other plant would have to have certain modifications of the construction work in the building to support the additional weight, and also to make sufficient height. It is all very true that waste heat boilers have not been installed in the other works because we are still in the experimental stage of the problem and that the houses are so constructed that it would be necessary to make considerable change in their construction to install them and then it is a question of course whether the cost of the installation would be justified by the return on the investment which we would get out of it, justified by the economy of the operation. We have also considered the question of Cox stokers or stokers on our boilers. We started to consider that previous to last year, and we decided that in 1923 we would construct an installation of boilers with stokers on them. We have at the Citizens works three boilers with stokers attached. They are in operation to a certain extent. They are not all, but they all have had fires in them and they are ready to run, we could run them. I don't think right today we are run-

ning them. We have had fires in them and we have had them tested and, if we needed to do so, we could get those boilers in operation. We have not stokers attached to any of the boilers in any of the other plants. I made inquiries [fol. 1055] again from people who are concerned with gas manufacture so as to advise myself about the feasibility or advisability of putting in Cox stokers. I talked to the people at Astoria. They had them over there. They have had, I think, two boilers for some time, but I think the other installation was later. The Kings County Works may have them. I think they have some there, but I am not positive. I have never seen them. I heard in a roundabout way, and I had information that they had such boilers. I did not get in touch with them to find out how they were operating. After conducting my investigation with the Astoria people, my conclusion was the same as it has been right along, that where you have a boiler house that is sufficiently large to accommodate an installation of boilers, it is advisable to make use of that room, even if you have not room for a Cox stoker and all the rest. Where you have a boiler house of sufficient capacity for the installation of the stoker, it is advisable to use that space by a stoker. If you have not such room, you must put up an additional building in order to make use of the Cox stoker, and we did that in the case of the Citizens Works, so we built there a new boiler house. We built it so that it would accommodate the Cox stokers. The other boiler house at the Citizens works is not capable of having the Cox stokers advantageously installed. We would have to go to a very great expense. There are two boilers at the Metropolitan Works on which we could install a Cox stoker, but the cost of doing so would in my opinion hardly be justified, because we would not have sufficient height for the setting of the boiler to use the Cox stoker to the best advantage. It is simply a question of having sufficient height of the boiler to be able to use the [fol. 1056] installation so that the ashes will be dropped down and go right into a car, and not have to be taken up from a pit underground. The new boiler house at the Citizens Works is higher than the other boiler houses. It has to be roughly 16 or 18 feet in order to accommodate the Cox stokers. None of the boiler houses at any of the other works is so built that a Cox stoker could be installed. So

the question which is vital as to whether we should put on Cox stokers or not, depends upon whether the boiler house is high enough to accommodate them and whether the boiler itself is high enough to permit of the most economical operation, we have to raise the boiler for economical operation. In the ordinary boiler with stationery grates there are no moving parts. The grate surface is horizontal and is composed of grate bars which have spaces between them for the air to go through. In the case of a Cox stoker the grate surface is movable. It is actuated by a mechanical means so that the grate itself moves over two drums, we will say, moves at a very slow rate. The coal is put on the grate and moves slowly to the back part of the boiler. The ignition takes place right on these movable sections of the grate and there is no shoveling of coal necessary the way it is in the stationary grate. It does away with all hand labor; it is a mechanical device. It would cut down our labor costs somewhat. In a boiler house room it does away with the labor of putting the coal in the boilers; it goes through the chute on the grate. It goes into the so-called boot arrangement and is allowed to go from that hopper or boot into the grate itself. There has to be a man there to oversee it, but he does not have to put it on there. If the mechanical arrangement is such as to carry the coal into that hopper automatically, you can utilize an [fol. 1057] inferior quality of coal in a Cox stoker, and I think it would result somewhat in this way, that you could run with a Cox stoker and use we will say No. 3 buckwheat coal, which is very small in size, without the admixture of any soft coal at all. In other words you would be able to use the No. 3 buckwheat to an advantage without any bituminous coal. We do use bituminous in the hand fired boilers to a certain percentage. Generally speaking the use of the stoker also tends to a more complete utilization of the fuel. The Cox stokers there at the Citizens Works were installed under the direction of our own people. The Bartlett Hayward Company did not install that. I suppose they might sell a boiler with a Cox stoker in it. I do not know. They also install the waste heat boilers. They installed those at the Metropolitan and the ones at the Citizens Plant. The boilers with stokers attached are all in readiness for operation. We also have there at the Citi-

zens Work the three waste heat boilers; they are there in operation. We are watching the operating results from that plant as to quantities, to see whether it is going to be more economical or not and keeping pretty close watch of it. I would expect that there would be during the year 1924 a lessening of the quantities of boiler fuel per M. I have not got any additional information on the cost from the dock to the stockpile in the various plants, and then from the stockpile to the generator house, during the year 1924. For the year 1923 the Fulton Works used the least amount of generator fuel to make a thousand feet of gas. They used 31.57 pounds and they used coke as generator fuel and tar as boiler fuel. The Nassau Works was the [fol. 1059] next one that make the most economical use of it; for the year they used 32.27 pounds of generator fuel. The next was the Equity Works. They used 33.1 pounds. The third plant that I mentioned in order of the number of plants would be the Citizens Works. The third would be the Citizens instead of the Equity. The Citizens Works used 33.02 pounds per thousand, generator fuel. The number of pounds of fuel necessary to make a thousand cubic feet of gas was the Fulton Works 31.57 per thousand cubic feet of gas made; the Nassau Works, 32.27 pounds per thousand cubic feet of gas made; the Williamsburgh Works, 33.7 pounds per thousand cubic feet of gas made; the Equity Works, 33.10 pounds per thousand cubic feet of gas made; the Metropolitan 33.07 pounds per thousand cubic feet of gas made. That is all. The average is 32.88 pounds per thousand cubic feet. The Fulton uses less per M than any other works and they used coke throughout the entire year. It is not my experience that it requires less coke in order to make a thousand cubic feet; less coke than coal as compared with coal. The relative uses of the boiler fuel at each works, the number of pounds per M are the Citizens Works, 17.61 pounds per thousand cubic feet of gas made; Fulton Works, 13.85 pounds per thousand cubic feet; Nassau Works, 16.06 pounds per M cubic feet; Williamsburgh Works, 13.91 pounds per thousand cubic feet; Equity Works, 15.44 pounds per thousand cubic feet; Metropolitan Works, 10.52 pounds per thousand cubic feet; the average being 14.13 pounds per thousand. There is a discrepancy between the Metropolitan Works and the other works. In

the case of the Citizens Works, as I have already explained, [fol. 1059] there was a great deal of construction work going on throughout the year 1923. The Bartlett Hayward Company or the contractors used a very considerable in fact a large amount of steam for their riveting hammers, built in the works and for holder construction, and the steam was furnished by the Citizens Works. That accounts in my opinion for the discrepancy. The Nassau had a similar condition to the Citizens Works. The steam was used by the contractor and it so appears in these figures.

Q. The Equity uses larger quantities, anyway, does it not, by reason of their comparatively smaller output?

A. There is apt to be some slight difference there by reason of that. The costs of a smaller plant such as the Equity, especially in the labor items generator labor and miscellaneous labor, and things of that kind, are apt to be more per M in many cases at a small works such as the Equity than they would be at a larger works.

[fol. 1060] That is, taking the one item of superintendence, it would be apt to be more per M in a works the size of the Equity than it would in a larger works. The amount of gas oil used at the various works in order to make the gas is varying day to day as I have described it. I would not say that in the case of oil there was any appreciable difference in 1923 between the amount used at the Fulton Works and at other works. The Metropolitan Works used the most namely 3.55 gallons per thousand. The Fulton Works used the least which used 3.46 gallons per M. The average of all works for 1923 was 3.52 gallons per M. I would not say at the Fulton Works, in 1923, in order to make a thousand feet of gas, they used less generator fuel and less gas oil than the other works, in the case of oil if there was an appreciable difference but in the case of generator fuel they used less. They used a pound and a half less than the Citizens and the Williamsburg and the Metropolitan. We [fol. 1061] have a contract to cover a year's period for delivery of oxide at our different works. We figure from our experience that we will require in the course of a year's business about so much oxide, and we made a contract with, as in the last year, two companies, the Oxide Company in Long Island City and the Connolly Iron Sponge and Gov-

ernor Company. It is based really on a more practical method still, that during the past year we used so many bushels of oxide during the year. We estimate on that basis how much we will require for the following year, and we add to that estimate a certain amount which we thing would be sure to cover us for the entire year, and we make a contract for that amount. The oxide is ordinarily left in the purifying box for a considerable length of time. It is not taken out and revived during that time, but the flow of gas is reversed so that the oxide itself is revived by the change in the order of the boxes. It is not necessary for quite a considerable period to take it out of the box at all. We do take it out eventually and when we find it is not advantageous to use it any longer we discard it and dispose of it. We do not put it back; it is used up when we take it out of the box. The oxide is charged off as it is placed in the box. In other words, if a box is filled with new oxide, the entire quantity placed in that box, that month's operation is charged against that works. At the time that the material is filled in the box. The length of time is remains in the box before it becomes finally exhausted, is a matter that is subject to some variation, depending upon the demands which are made on that works for gas. I should say that a year would be very apt to be the general run, if there [fol. 1062] had not been undue demands put upon that plant. Each plant is apportioned the amount of oxide that its requirements turn out to be. We contract for a quantity as I have stated, which we feel is more than sufficient to cover us for a year. As a plant requires new purifying material, they notify me and an order is placed with the oxide company to deliver the amount. I think by and large the plants use very closely about the same figure.

To determine how out oxide has arrived at the point where it should be discared, it is done even whether we know there is any danger point or not. We do not let it get that far. We make tests regularly throughout the day, on these purifying boxes with acetate of lead and we know what the condition is. Experience has taught me that this oxide will lose its efficiency after so and so many thousand feet of gas per unit of oxide has been in contact. The volume of gas per unit of oxide will operate to destroy the usefulness of the oxide is not a fixed figure again, but it

would run say eighty thousand to a bushel, or something like that. That varie- in some plants more than 80,000 feet will run to the bushel, and in some plants less than 80,000 feet to the bushel. That is an operating condition that is unavoidably so. That again is not an exact chemical variation. A condition like this, that if we were suddenly called on for a largely increased amount of gas to be made at one particular works over a long period that we would very likely not get as long a life, if I may put it that way. Referring to the operating conditions, there would be differences, of course, as I have said, and there would be differences in the amount of gas which would be purified by a certain number of bushels of oxide, and I think that it would [fol. 1063] run somewhere near as I have stated on an average, and I think that is about the only way I can describe it. It might be more than the 80,000, because the oxide will be placed in layers in the box and it is not possible so far as I know, to get an absolute flow through the entire bed of oxide. In some cases there would be places where more gas would go through, and other places there would be less. It is not an exact operation, where you can say you have got so many bushels and they have got so many pounds of ferrous oxide and they put the gas through and that has got so much sulphur in it, and you take it out and you have got a certain result. It does not work out that way; there are differences. The quality of the oxide practically is the same in each plant. The method employed in the purifying boxes is practically the same in all the works and yet you get some slight variations. It would show up in figures in some cases as quite large variations. It does not depend upon the gas itself. It depends upon this, that the oxide is charged off, the number of bushels are charged off, you see, as it is put into a box. You might get towards the end of a year a large amount of oxide placed in a certain works in the boxes; that would be charged off as used. As you put it into the box, there is so many bushels of oxide, amounts to so much money, and the entire amount of money is charged off right away, right off the bat. At the beginning of the year, you might have had the same amount of oxide, and that was all charged off at the beginning of the year, charged in the same year, whereas if the box was going to last for a year and the box had been filled in the middle of

the year, you would only have half of that. Well, roughly, [fol. 1064] we replace this oxide. As I estimated, about a year, in some cases it is less and I have known cases to go longer. There is no relation between the amount of H2 S in the gas, that is the hydrogen and the efficiency. The number of bushels the Nassau used was 43,200, in 1923 it was 88,180. There was a reason for that. During the year 1923 we completed the installation of a new set of purifiers and those purifiers had to be filled with new oxide, and a good part of this additional oxides went into those new boxes, to the extent of 63,800 bushels in November. That supply would not last seventeen months. Charging during the year 1922, about 3,300 bushels a month, is a condition that we certainly meet by filling up a new set of boxes with new oxide, and that new oxide is charged off as it is put in the boxes, so it appears in this figure as an additional amount over the previous year, and probably has a great deal to do with this variation. It was a decrease in the Citizens. The Metropolitan Works and the Williamsburgh Works and the Fulton Works and the Equity Works each decreased their cost of operation about two cents per M in 1923 over that in 1922. The Citizens Works decreased their cost but little, it is a fraction of a cent, in 1923 compared to 1922, but at the Nassau Works, the cost, I would not say was an increase sufficient enough/ to make it very noticeable. That is the only plant whose cost did increase in 1923 over 1922. The only way I can account for the fact that each one of the plants had a decrease in 1923 compared to 1922, and yet the Nassau increased, so far as the differ- [fol. 1065] ence in costs as shown by the figures is concerned, that it was negligible. So far as the impossibility of getting the same result between any two works. Speaking of the Nassau Works, I think the Nassau increase was very small. The Nassau Works made in 1923, 3,662,266 cubic feet—that is in billions. In the year 1922 the make at Nassau Works was 4,058,743. You can see there that there was more gas made by the Nassau in 1922 than there was in 1923. You will also observe that the conditions under which the Nassau was operating were not favorable to a decrease over the previous year in the cost. In the Nassau operating expenses for oxide and for repairs to water gas sets accounts for an increase in the cost of operation in the Nassau. The difference between 1923 and 1922, in the total

cost, would be .25 of a cent in the two years; that is the total cost for the two years. The difference between the oxide in the two years is .0034 in 1923 and the difference in the water gas sets, material and labor is .0074. Those two items largely account for the increase, that is they largely make up the difference; whether they account for it I do not know.

The gas making labor for the year 1922 for each works is as follows:

Citizens	Works	7.05	Williamsburg	Works	5.57
Fulton	"	7.37	Metropolitan	"	5.41
Nassau	"	5.75	Equity	"	12.15

In 1923 the gas making labor at the various works was as follows:

Citizens	Works	6.93	Williamsburg	Works	5.45
Fulton	"	6.39	Metropolitan	"	4.76
Nassau	"	6.71	Equity	"	11.85

The average for the year is 6.06. During the year 1922, [fol. 1066] speaking of gas making labor, there is quite a variance, between the Equity Works and all the other works. The Equity is almost twice as high as the other works, the main reason being the small plant and the comparatively small amount of gas made. I would say that is the main reason for it. The rates of pay are about the same in each one of the plants. The gas making labor at the Fulton Works and at the Citizens Works exceeds, I don't think it is quite a cent, the gas making labor at the Metropolitan, Williamsburg and Nassau. The Metropolitan is 5.41, the Williamsburg is 5.43 and the Nassau is 5.75. The Citizens is 7.05 and the Fulton is 7.37. There is over an increase, for the year 1922. I am checking the increase, that is about it, about a cent. The Williamsburg Works were making a large amount of gas in 1922. Their costs for gas making labor is nearly the lowest. The Metropolitan is .15 of a cent less than the *Metropolitan*, over the Williamsburgh, despite the fact that they make less gas at the Metropolitan, but you have to consider the relative amount of gas made in proportion to the capacity of the works. I would say in the case of the Citizens Works that their Conditions there were not the best for operating

conditions, so far as labor went. They were hampered, and very considerably hampered in construction work going on there in 1922 and that would have a great bearing on the cost of labor.

I would hardly expect during the year 1922 that the Fulton Works would be as low, for instance as the Metropolitan Works or as the Williamsburg Works or as the Nassau. It is a smaller plant, very much smaller. Superintendence costs more in a smaller plant and generally [fol. 1067] speaking, I would expect that there would be an increased cost at the Fulton Works over the Metropolitan, the Williamsburg and the Nassau. The Citizens made practially the same amount of gas but they were operating under very adverse conditions and that unquestionably increased the amount of labor at the Citizens. The Fulton made less gas. Taking the make in 1922 of the Citizens and the Fulton, there isn't any great variance. One of them made 2,986,000,000 and the other made 2,829,000,000. All the charge like superintendence, which includes the actual superintendents and includes foremen and men of that type, is—the more gas you make, the lower that charge is, and I think the question comes down somewhat to the factor that I have stated right there and that is the only explanation I have. I have explained why it is so large in the Citizens Works. I think the labor there is due to the fact that you cannot operate all the time on the same per thousand figure. The Fulton has made possibly a better figure in 1923, than they have in 1922. I think coke has a bearing on the subject. In 1922 the Fulton works used coke. In using coke, as they used it at that time, they had an increased amount of labor in the generator house. I know that to be a fact. They did not use as much coke in 1922 as they did in 1923, but they did use coke in 1922. In 1923 the Williamsburg cost for labor was less than in 1922 and the Fulton labor was less than in 1922. The cost was lower and used their materials in 1923 to better advantage. That is, their labor was less for the reason that *that* Fulton Works were put on a uniform make of gas throughout the year 1923. In 1922 they were varying; [fol. 1068] that is, the machines were taken off and put on, and that causes more labor in the works when they do that. In 1923 I gave orders to keep Fulton on a uniform make of

three machines right through. I gave orders to the despatchers not to change the make unless something unusual happened. That is the explanation. If you look at that very closely of the cost of gas making in 1923, that has a great deal to do with it.

[fol. 1069] Brooklyn, New York, March 10th, 1924.

ROBERT W. BUSH

Cross:

The amount expended for repairs at works per M at the various plants during 1922 and 1923 are as follows: In 1923 at the Citizens Works .0747; Fulton Works .0290; Nassau Works .0368; Williamsburg Works .0259; Equity Works .0341; Metropolitan .0185, the average being .0344. Speaking for the year 1923, there is a variance between the cost per M of the repairs at works in the various plants. There is a large variance between the cost of repairs at the Citizens plant and at the other plants. The reason for the increased cost at the Citizens Works is due to the amount of work that was done there during the year 1923. The principal item of repairs that was made at the Citizens plant in 1923 is the remodeling of the four Williamson sets. That takes in the whole set. That is all there is to it, that is the principal reason. The principal reason is the work that was done in remodeling the four Williamson sets. I can not give the exact figure for the remodeling on the sets. I remember there was a figure of about $97,000 charged into my operating expenses for that particular item in the year 1923. I haven't figured it how much per M, because we have simply the total costs of repairs here. I am testifying from what I had in mind, and I think that figure was approximately $97,000. That is simply a figure that I had [fol. 1070] looked up before, and I am quoting now from memory. The Citizens Works made for that year 3,420,453,000. It will amount to about 2.8 cents, a trifle over 2.8 cents. That is the figure based on the $97,000. It is divided by the make. Make it in round numbers 3 cents. I would still have left .0467 as the expenditure for our repairs at works, deducting 3 cents. The total expenditures

for repairs at works during the year 1923 at the Citizens plant was $255,657.28 and the total expenditures for repairs to water gas sets and accessories at the Citizens Works during the year 1923 was $147,586.96. As to why it was necessary to spend about $50,000 for the repairs over and above the repairs that I have called attention to, I know the nature of the work that was done, but as to exactly how the accounts were divided, I cannot tell. There were repairs made to the buildings, but that would not be water gas sets. There would be repairs for recheckering; the usual repairs incident to the running of the sets. There would be repairs of any nature which are charged against the machine. I would not call any of those repairs unusual repairs. They were repairs which were incident to the business. I would not call putting the three shells on or any of them unusual repairs. That represents an expenditure, the balance there of approximately $50,000. That very likely exceeds the repairs at any other plant, with the exception of the Nassau plant, which amounted to $56,-[fol. 1071] 761.57. In the Nassau plant we have an expenditure for repairs to the four generator sets there. I haven't the figure here. I have the two figures for total labor and total materials for repairs at the Nassau Works, but I haven't it subdivided. The total figure for the entire repairs to water gas sets is $56,761.57. I can not make the exact division to show how much of that expenditure represents the alterations to the four Williamson generators. I would say that there would be a very large proportion which was against the remodeling of the Williamson sets. I don't know the figure that was charged into the operating expenses at the Nassau Works for the repairs to our four Williamson generator sets during the year 1923. I don't recollect that the figure of $13,739.14 is the figure that is charged into the operating expenses at the Nassau Works for repairs. Eliminating that figure from our repairs at the Nassau Works, the expenditure for the ordinary repairs, the figures show it does not equal the expenditure for the ordinary repairs at the Citizens Works. The repairs at the Citizens Works for the year 1923 were very large, larger than they had been for a few years preceding. They were larger than they were the year preceding. The cost of the repairs for 1922 was as follows: Citizens, .0407; Ful-

ton, .0310; Nassau .0209; Williamsburg, .0294; Equity, .0298; Metropolitan, .0216, the average being .0289. The repairs at the Citizens Works in the year 1922 exceeded [fol. 1072] that of every other plant, because there was work going on at the Citizens plant during 1922 which made an additional cost there, and the cost was allocated as to repairs or other accounts. I mean that I knew what was done and I so reported and the accounts were charged according to the Uniform System of Accounts. So far as I know that was so. At any rate, certain charges were made by the auditor.

The figure is higher per M. It is higher per M in the Citizens Works because I think that there were more repairs, and there are differences right along in the cost per thousand for repairs as between the different works. There was some work going on there at the Citizens plant which called for quite a large expenditure of money. That was work on a sewer which ran through the Citizens property that amounted to quite a good deal of money, and as to the proportion of the charges I cannot say. I cannot tell how much of the expenditure caused by the collapse of the sewer is in the repairs at works. That sewer runs diagonally across the property of the Citizens Works. The sewer was a City sewer. The dock moved out towards the canal, and the sewer itself then also moved toward the canal—the ground went away from where the sewer was and it caused breaks in the sewer due at first to the collapse of the bulkhead property. I made an investigation of the cause of the collapse and I was there when the City's representa- [fol. 1073] tives were there. Our construction engineer took it up with the City authorities. That correspondence did not come to my attention. I haven't it, but I heard about it. I was unable to determine the cause of the collapse of the dock and the sewer more than I have stated. What I stated was what happened. I could not say what caused it. There had been coal stored on the Citizens Works property and the sewer at one point ran under the property where coal was stored. I put coal on that portion of the property which the sewer occupied—under which the sewer ran, and on other parts of the property. The coal was not stored over the whole length of the sewer; that is what I mean to say. The sewer was not covered by

coal stored over its entire length. I mean from the street way down below up to the street on the north part, we put coal right along the sewer easement, so it went diagonally across the property. There was a certain portion of our property devoted to the storage of coal. We piled coal, as a matter of fact, over one portion of the property under which the sewer ran. I was present when there people there, and I discussed the matter with the construction engineer, and we discussed the cause of the break among ourselves. We reached the conclusion, as I have stated it—that the dock moved out and that left a space so that the earth moved out and that caused the trouble at the sewer. The collapse of the dock and the sewer was not caused by [fol. 1074] putting the coal on the property. The cause of the dock going out was a thing that we did not find out. We do know that that was the first thing that happened. The dock went out, and took with it the land and some portion of the sewer. We had coal on there—I cannot tell the number of feet away from the edge of the stringpiece; but it did not go down to the stringpiece. I am taking an average along the dock, and I should say it would have been ten or fifteen feet. I did not conduct any of the correspondence between the City and our Company. I don't know what conclusion the City came to in reference to the cause of it. A very small quantity of our coal went into the canal, less than a hundred tons. I thought that there might be some expenditure caused by the repair of the sewer or the dock in there. I have seen installed quite a few gas machines at various works. The repairs which are made from time to time would have to be made the same with a new set as they would with an old one. I refer now to the rechecckering of the machine. That is one, and then, of course, there would have to be repairs made to the hot valves and the other parts of the apparatus. As to the rechecckering of a machine, it does not matter whether the machine is old or new, we have to rechecker it within a certain number of hours. That is our practice. Generally speaking, some of the repairs would not be made as often. I would not limit [fol. 1075] a new machine to rechecckering. There would have to be repairs made on a new set as put in. I will give one instance. The top of the generator is covered with a sheet of steel. It is more or less conical, and that top of

the generator has to be grouted with cement over the lining which is beneath the shell. It is very necessary to keep the generator so that this grouting will cover all the space between the steel shell and the fire brick lining under the crown. That grouting has to be watched and has to be made at times after the machine has been put on. I am talking about a new machine. You have to keep after it very carefully, otherwise the crown would be warped and you would have to have a new crown. That is just one instance. You have to keep up the maintenance of your valves on the machine, even in a new set. You might have repairs there. In other words, it is not a constant figure that I could give for any particular thing; it would vary. Take the steel shells on the generator, the carburetor and the superheater. The repairs on those would be slight as compared with what they might be at a much later date. In the case of the purge valves, it would exist longer in a new machine before it would be necessary for us to change them than they would in an old machine after we had once changed them. I should not expect that there would be any difference. We would subject it to just the same conditions whether it was a new or an old machine. The stack valve would be just [fol. 1076] the same. That is, the same answer would apply. The repairs would come at such times as it was necessary to do something to that particular machine, and it would not depend upon the newness of the machine itself. I said the shell of a new machine would last a certain number of years before it was necessary to repair it, but I did not say with the exception of anything else or everything else. The shells themselves would not require repairs for some time. As far as the steel shells of the machine are concerned, the repairs would be less for a new machine over a certain period than they would probably be in the case of an older machine. As far as repairs would have to be made to the valves and to the inside of the generator and to the lining generally and other cases like that, there is no definite figure that I can give. They might occur in a brand new machine a short time after it was put in to work for the first time and they might not occur until a little later than that. I have made the repairs to the shell the exception. I think that is the principal exception. I do not think of any others right now.

The Metropolitan plant is, in the first place, a plant that was rebuilt to be more compact, and it has an advantage in the respect of compactness. The machines are all the same type and practically of the same size. Coal handling machinery, and so forth, has been installed there, and the plant [fol. 1077] was remodeled after the other plants in the system were remodeled, remodeled at a more recent date. It is a more recent plant in that respect. The fact that it is a more recent construction and more compact, is the reason in my mind that it is able to manufacture gas cheaper than our other plants. I have noticed year after year that the manufacturing costs at the Metropolitan plant are less than at the other plants. I have looked over the reports to ascertain the reason for it. That is part of my job, and I concluded that it had nothing to do with the efficiency of the operating force. I know it to be a fact that the men in the other works were just as efficient as at the Metropolitan. I know them all. For the year 1923 the total cost at the Metropolitan Works was about 2.4 cents per thousand less than the cost at the Williamsburg plant, and in 1922, there was about the same difference. There would be a difference of about 2.6 cents in 1921. In order to determine why a plant such as the Williamsburg, which manufactures the greatest quantity of gas, can not manufacture it as cheap as the Metropolitan, you have to take into consideration the question of the amount of gas that the plant manufactures during the year in proportion to the capacity of the plant. The plants of course vary in the percentage or the amount that they manufacture in proportion to what their capacity is. The year 1922 indicated that the Metro- [fol. 1078] politan and the Williamsburg made about the same relative amount of gas, as compared with their capacity, and still the Metropolitan had a lower cost. Another reason why they should have a lower cost at the Metropolitan, except the compactness of the plant and its more recent construction, is that coal handling machinery was installed at the Metropolitan Works, and that decreased the cost, probably. Additional coal handling apparatus, I intended to say. We have additional coal handling apparatus at the Metropolitan Works, that we have not at our other works, so far as it affects taking the coal and placing it in the generator. The charging machine was installed last year. It would affect the difference, in 1923,

of the cheaper cost of manufacture at the Metropolitan over our other plant. And in 1922 the Metropolitan again has the advantage of being a plant which was rebuilt, at a more recent date, and it was more compact. I have given good reasons before, and I will give another one. In making gas, my own experience shows me that where you have a plant with the machines all the same type and all on the same level and all together in one house, that you should look for better results than you would with a plant where the machines differed in construction. At the Metropolitan plant they have all one kind of machine. That plant was started to be rebuilt in 1909. The plant was stopped so far as the making of gas was concerned, until November of [fol. 1079] 1911. During that time the whole plant was reconstructed. Since 1911 they have had only one kind of machine. By the new installation—coal-carrying installation, I had reference to the charging machine and the carrying of the coal generally and transporting it to the generator house and disposing of it in the generator house. The coal-carrying apparatus in the Metropolitan is a little more up to date than the coal-carrying apparatus in the other plants. It saves some money over a charging of machines by hand, for instance. I will amplify that, so far as the coal-carrying apparatus is concerned, that it is a better operating proposition. There is an economy over some other method which obtained before. My general impression is that the Metropolitan plant has operated, certainly for the last two or three years at less cost. I don't recall all the figures back to 1911. As far as my memory serves me, I think the last 12 or 13 years were certainly not any more in those other years in cost. In 1922 the Metropolitan cost was 47.35 cents and the Nassau Works was 47.58 cents. It was lowest to the extent of two-tenths of a cent. The costs of manufacture in the Metropolitan plant have been lower than at all of the other plants for the years 1918 to 1921. The more efficient plant is the plant in which the placing of the apparatus is done in accordance with a preconceived plan, and consequently there is a coordination between the different parts of the plant. [fol. 1080] That is especially true in the case of the Metropolitan Works, where it was practically rebuilt. It was a plant which had been entirely rebuilt. The same general character of machines had something to do with it. They

have all Williamson machines at the Metropolitan, and the other plants have not only the Williamson but the three-shell. For instance, at the Fulton Works they have Williamson machines. At the Nassau Works they have the Williamson machines and they have three-shell machines. That is also true of the Williamsburg Works, where they have different types of machines. The Fulton Works machines were built when the works were remodeled which was done after the remodeling of the Citizens Works; in fact, it was done in the following year. The design of those machines was not the same as the design of the Metropolitan Williamson sets. When we decided to remodel the Metropolitan Works, the matter of design was discussed very thoroughly and I decided that the type of machine which would be best for our use was a machine with an oval type carburetor and superheater, which I expected would give us a larger capacity. In other words, the design in the Metropolitan machines is different from the Fulton machines. We obtained additional capacity from the machines at the Metropolitan Works over what we could obtain at the Fulton Works, and we could do it at a decreased cost. It showed that my judgment in the matter was cor-
[fol. 1081] rect. The latest machines which we have installed are at the Citizens Works, and in that case they are three-shell machines. We did not abandon the Williamson oval and install the three-shell. Speaking of the machine at the Citizens Works we rebuilt those four machines. They were not oval, but they had an increased capacity due to the changes which we made to the machines, and they are not oval now after we changed them. In the other works, we did not adopt oval Williamson machines because we had rebuilt the other works and we had rebuilt them at a previous time with the round type carburetor and superheater. Since we have put in the oval Williamson machines at the Metropolitan Works we have installed in the other works quite a few gas-making machines. We have adopted the oval Williamson machines such as are the Metropolitan in the case of two machines at the Williamsburg Works—put in two of the larger type. We have not followed that out in the other works, because we had machines which, through changes which we made to them, gave us the capacity which we found was sufficient. To adopt that same kind of a machine for our other plants would not have been economical,

and in my opinion it would not have been good operating judgment, to have torn out the parts of the Williamson sets, say, at the Williamsburg Works. They were doing very well and they were making a reasonable amount of gas and we felt that we certainly should not go to work and tear [fol. 1082] those out. They were in good operating condition. We installed new three-shell machines at the Citizens Works. It was our purpose and it was on my recommendation that the type of machine as installed was actually put in at the Citizens Works. We did not adopt the oval Williamson for the Citizens plant. We remodeled the present four Williamsons, as I have described before. The 3 shell machines were put in because we wished to have that type of apparatus to compare with the Williamson sets. One of the reasons the Metropolitan works cost less to produce is because they have machines of one character, but there are a great many others. The reason for not adopting that policy in so far as the other plants are concerned is that we installed the 3 shell machines because we felt that was a machine which was being used in other places; they had gotten good results from them, and I wanted to try those sets in our situation and find out if we could better our results. That is good business judgment. We had at that time a machine in operation at the Nassau Works which was a 3-shell machine, but that was not sufficient on which to base results. That is, you could not segregate that one machine and limit the Nassau Works to making gas on one machine, it would cut their capacity down; so we first installed three of the 3-shell sets and then, installed three more 3-shell sets; at the Citizens Works so that we could prove whether there was any economical gain in operating with those machines of that type over the Williamson machine. They are 3-shell machines, in operation in our various plants for a good many years but not the present type of 3-shell machines which are built with larger capacity. I think that the present 3-shell machines [fol. 1083] are an improvement over the ones that we have been utilizing, because it stands to reason that the state of the art will advance and from time to time improvements will be made in the construction of a gas machine. I think they will produce results which are even better than the oval Williamson machines. In the case of the Citizens Works where we have the two types of machines, I believe

that the 3-shell machine will surely make as much, if not more than the Williamson type machine at the Citizens Works. I think it will make it as economically. We completed the installation of three of the 3-shell machines at the Citizens last year. I have been watching their operation since that time, but we have not been able to operate them to any great extent until this present year. It — my opinion and I feel pretty sure of being right, that the 3-shell machines will operate with a greater capacity in making gas than would the Williamson machines. In other words, there will be a larger make per machine from the 3-shell type than from the Williamson. I will simply state that I have not any figures yet on which to base the economy. All I know, now, is that they are going to make more gas. I don't think it is going to cost us any more for the 3-shell machines. I think we will get more gas. The expense of running the 3-shell machines would not be any greater than the expense of running the Williamson oval machines, but the 3-shell machines would produce more gas than the oval Williamson machines. If both of those expectations are realized, the effect will be to produce gas at a lower price per thousand unless this happens, that the economy in the generator fuel or in the use of the oil is not as good as with the Williamson sets. All I know is that we [fol. 1084] are going to get more gas. If the three shell machines lately installed make more gas, and if the cost of all the fuels and the oil and the labor and everything pertaining to the cost of making gas remains exactly the same, then there will be a gain. In other words, if you make more gas, you will divide that into a greater make, and it would give you a decreased cost per thousand. I know I am right on that, but when it comes down to the final proposition of just how much the cost is going to decrease, I cannot tell but I will say this, that I believe that we will make gas cheaper in the new machines at the Citizens Works than we can at the Metropolitan. We have had three-shell machines in operation at the Equity plant for all of fifteen years. I have had a chance to observe their cost of operation. They have no other kind of machines there, except the three-shell machines. My period of experimentation with those machines is over anyway. The 12 foot Williamson machines in the Metropolitan Works would make more gas in 24 hours than the 8 foot 6 set at the

Equity Works. The cost would depend again on the capacity which would be usable at the Equity Works. We have four there, but the question of operating four machines at the Equity Works would hardly be a matter which could be carried on. In other words, it would not be feasible to operate four sets at the Equity. We can't operate all four of them because the capacity of the works would not accommodate the make of four machines. We usually run about two machines and in the winter keep two in reserve. The Williamson sets are very much larger as to capacity than the 8 foot 6 machines at the Equity. It would be im- [fol. 1085] possible to make any fair comparison between the Williamson sets and the 8 foot 6 sets at the Equity because it would not be a thing that you could carry out. The capacity of the 8 foot 6 set is much smaller than the capacity of the Williamson machines. When you get the price per thousand cubic feet of gas made, of course it depends upon other conditions in the plant and whether the plant capacity is sufficiently large to take care of the very large generator capacity. I have examined into the question of the unaccounted for gas and its causes to a certain extent. It doesn't come particularly under my jurisdiction, but I get reports. The gas as manufactured is measured at the meters of the gas works. There is a loss of gas which enters into this unaccounted for gas, which occurs at the works, not in the process of manufacture but after manufacture. There is some condensation in the holder and that would take place to a greater extent in cold weather than it would in the summer time. In the summer time, there is an increase in volume. My supervision ends after the gas leaves the works and passes into our storage holder. I am done with it when it leaves the works, when it has gone through the different apparatus. The gas having left the works is now in the storage holder. When it is in the holder, it is out of our jurisdiction. The gas is pumped from the works into some holder, and that pumping system is part of the distribution system. The gas is measured at a later period. The gas leaves my jurisdiction when it passes through the works meter. It is there measured and would be a fair statement, that is before it reaches the storage holder or commercial holder, on its way to it. I receive reports each month; I get a copy of the report show-

[fol. 1086] ing the figures for unaccounted for gas for the previous month.

The Distribution Department has charge of limiting or keeping down the loss of gas called "Unaccounted For Gas." Mr. White might have something to do with it. Naturally, like everyone else, I am interested in the problem of Unaccounted For Gas in our company. I always look over the reports for unaccounted for gas and I have a copy of a report which was made in the auditor's office which give the total of unaccounted for gas. I only see the result of that computation. This term "Unaccounted-for Gas" is the difference between the volume of gas registered at the meter where the gas is manufactured on the one hand, and the volume of gas which is consumed by our customers, added to the volume of gas found in the holders throughout the distribution system, on the other hand. Those two put together, compared with the amount of gas which goes through the meter at the works, plus the gas used by the company itself which is metered give you the material upon which to determine the amount of gas unaccounted for; that is, the data. In other words, track is kept of the gas used in the works. It all passes through a meter at the works; when the gas passes through a meter at the works, it is deemed manufactured and that registry constitutes a record of the amount of gas manufactured, and from that point on someone other than myself has jurisdiction over the systems that carry the gas along through the distribution system and on through the service pipes, and the maintenance and so forth. I have been present at a conference called where that matter regarding the loss of gas came up. As I recall, there were present Mr. Paine, the auditor, and I think Mr. At-[fol. 1087] wood was probably present—we sit in together on these conferences—and Mr. White. I do not have a list of those who were present, but it is our practice to meet in conference on these various matters. I do not recall the report gotten up on the question of unaccounted for gas. It was discussed. We made it and our meters measured the gas, and furthermore, all of our station meters are tested regularly by the American Meter Company at least once a year. I say "at least" because should there be anything that should lead us to think there might be some-

thing the matter with the working of the meter, the meter would be immediately withdrawn from service and a special man sent for to inspect the meter, from the American Meter Company. If repairs were necessary, they would be made and the meter re-tested. The tests show that our meters were correct. This unaccounted for gas is not caused by incorrect registration of gas at the works meter. It is not so in our company. Our company measures it correctly each time. If there is a loss of this gas, I don't see how it can be blamed on us. We have installed some new station meters. The other meters were working all right but with the increase in demand for gas we needed more capacity. In other words, we installed more capacity in meters. The plants under my supervision also manufacture gas for the subsidiaries. They manufacture a certain amount of gas for the City of New York. So far as the cost of putting the coal from the barges into our stock pile and then the cost of putting the coal from the stock pile into the generator house in our various plants, I see no way of obtaining that accurately. I have been over that and spent some time on it, but you cannot put it in any shape that it would possibly tell, so far as the comparison [fol. 1088] is concerned. That is from storage piles to generator. That is one of the features which enables the Metropolitan Plant to operate more cheaply than any other plant, because of their more economical coal-carrying apparatus. I should say that the Citizens Works as now constituted is the most costly operating apparatus from the stock pile to the generator house. I am confining myself to the large works. So far as the total cost is concerned, the Equity is the most costly of all. It goes in a car that goes on to the elevator, and it is elevated to the charging floor, I have not the figure as to what that costs. I think I could give that; but in the other plants the operation is so involved as to where the stockpile begins and just what is done before it reaches the generator house, that I cannot say. For the Metropolitan Works, this is what happens: The coal is unloaded with the hoisting apparatus; taken out from the coal barge; then that coal is placed on a belt system which takes it across and through the storage shed to the generator house. It goes in, of course, through changes in direction of the belts, to a storage in

the upper part of the generator house at the Metropolitan Works. It is drawn from those receptacles—those bins—into the machine, from which the generators are charged. Of course, the coal is weighed as it goes into the charging machine. At some times, through not having the boat present we might have to pick up the coal in some other way from our stockpile. It really is impossible, as I see it, to give an intelligible figure as to what it would cost, because it would vary in all kinds of different ways, depending on where we got our coal, whether we got it from our barge [fol. 1089] direct or whether from our stockpile and how much we got. Besides the Metropolitan we have a charging machines at the Nassau, just been installed. We have not had time yet to install any at the other plants. We contemplate installing them at the other plants. It would appear that that charging machine makes quite a saving in the labor and I believe it does. They have charging machines at Astoria. I could not say whether they have them at Kings County. I am not familiar with Kings County Works. I would not want to express my opinion at variance with counsel's but it seems to me that I gained more by being reasonably familiar with larger plants such as those of the Consolidated, we will say, and I have visited those plants; also I have had many talks with the Consolidated people, even though I did not visit the plants at that particular time. We keep informed as to the cost of manufacture at other plants aside from the Astoria. For instance, I have been to the Ravenswood plant, and I have been to the 21st Street Works, which is a very good works. I did not mean to have that limited to the 21st Street Works. I think they are all good works. I have not the Kings County Light Company's figures for manufactured gas for the year 1923. I learned however, that they have the waste heat boilers and Cox stokers and the charging machines, and they also utilize their exhaust steam, but they have got nothing on us. I do not know what B. t. u. content the Kings County have been making. This year and last, the only knowledge that I have of their unaccounted-for is that their unaccounted-for has been considerably larger than ours. It has been that way, I think, for a number of years. I should imagine now they are using exhaust steam. If they are using exhaust steam, I

[fol. 1090] think, it is a very safe bet that they are using that exhaust steam for making gas. I have not seen them do it, but I presume that is the case. We have been using exhaust steam for making gas for a number of years. I do not know what method they have for using it. I doubt if anyone could use it any more efficiently than we do, even though I do not know how they do it.

Speaking about unaccounted-for gas, the Kings County Lighting Company has always been notorious for the great loss of gas that they have had. I understand that is somewhere around 17% of the gas manufactured. I had not heard that they had succeeded in cutting that down to 9 per cent. I have not inquired of them as to how they were able to accomplish that. 9 per cent would be a trifle less than ours. * * *

[fol. 1091] The increase over the whole system in the amount of gas for 1923 over 1922 was 10.59 per cent, that is a little over 10½% over the previous year. That is just the figure taken on a percentage basis. I don't know how much the subsidiaries increased for I took the whole system. I couldn't tell about how much it is. The question of how much the subsidiaries would demand of us was included in my 15 per cent. That was estimated for the gas sent out for the previous years by all systems. In October I also estimated how much the demand would be for 1924. I took into consideration the increases in the amount of gas, in per cent, starting from January 1st 1923 and found that the percentages were very large indeed over the previous year. Therefore, in making up my figures, I took 15 per cent again, that being the amount of gas on which I would estimate the oil requirements. My estimate was based on the total amount of gas sent out, which included the subsidiary companies. I had a report in my office for each month, showing [fol. 1092] the increase in the total sent out each month over the corresponding month of the previous year. I did not investigate whether our increased demand came largely from our subsidiaries because my problem was how much oil would be required on a certain contract, and I based that on the total amount of gas that I estimated would be made. It doesn't make any difference to me where it goes, but in determining whether you are going to have the increase, you must take into consideration the building going on in

the community supplies by our company. I should imagine that the increased amount of building and the fact that there were many more people burning gas in those buildings, would increase the amount of gas sent out, and I do know of course that in the subsidiary companies, there has been far more building going on than in our territory alone. Despite that fact, I did not look up the figures showing the increase by the subsidiaries from one year to another, I looked it up as to the whole system because I was familiar with those figures, in a way. I have seen the figures for the subsidiary companies and for the Brooklyn Union Company, but I took the total figure. I had the figures for the subsidiaries independently and they were added together with the Brooklyn Union sendout. * * *

[fol. 1093] Brooklyn, New York, March 12, 1924.

ROBERT W. BUSH

Cross:

To reach the figure of 10.59 as representing the increased consumption or sales of the Brooklyn Union system for 1923 over the year 1922, I took the gas sent out, for the year 1923, 21,985,962,000. After I obtained that figure I then took the send-out for the year 1922 which was 19,881,427,000.

The difference between those two divided by the amount for the total year gave me a percentage of 10.59 per cent increase. The increase of gas sent out, from the works is approximately what they manufactured. It would be practically the same as manufactured. The total amount of gas on hand on the first of each year, would vary slightly. That is as near as I can get to stating the amount of gas manufactured. I cannot get any closer to it. It does not affect the amount manufactured, of course. That was a definite amount as shown each year. The total amount of gas made in the year 1923 was 21,984,891,000. It is practically the same as the send-out, slightly less.

The make of gas in 1922 was 19,885,148,000 and in that instance exceeds the sendout, slightly. The variance between the make and the send-out would simply be the difference in the amount of gas in the commercial holders of the company for the two dates; that is, at the beginning

and the end of the year. We take our make from the station meters. The send-out is figured from the holders themselves. It would serve you to go to a storage holder or commercial holder from the works before any consumer [fol. 1094] takes it at all.

It is impracticable to have a consumer take it before it goes into a holder, because the gas goes into the storage holder before it is distributed to a consumer. It is the general engineering practice, in the first place; it is practical engineering; and it is the way in which the gas was actually sent out, as differentiated from what was on hand in the holders, is arrived at. We take good care that no one does get gas before it gets to the holders, because we measure the gas as sent out from the amounts in the holders.

One object of sending it to the holders is so that we can measure it. The other object of sending it to a holder before giving it to a consumer is if you did not have any holders in which to put your gas you would not be able to operate it. They could not consume it as fast as we could make it. That could not be done because the amount of gas as consumed would vary very greatly from the amount of gas made at the works at different hours in the day. There has to be a capacity in the holders so that during the morning hours, we will say, from 12 o'clock midnight until seven, there is a sufficient space in the holders throughout the city to allow for a practically uniform make of gas at the works. During the early morning hours the make of gas exceeds the amount of gas sent out during the hours up to we will say about 7 A. M.; possibly it might be earlier than that sometime.

I have given one very good reason why one plan is approved by our profession and another plan is disapproved and that was the one that in order to operate ac- [fol. 1095] cording to good practice and *and* in order not to increase the cost of operation, to make it as efficient as possible, that it is a necessity to have holder capacity and for gas to go into the holders. There is another reason why it is certainly necessary to put gas into the holders, and that is this: That the make per hour at the works would vary in quantity; it will vary so far as the quality of the gas made at that particular hour is concerned; it will vary somewhat over the preceding and the following. And con-

sequently the holder is the means of averaging up the quality of all the gas made. It mixes in the holder and becomes an average gas, that is a very important reason. I think there is a good explanation, and that is, that I don't know of companies that do it in any other way.

Another reason why it is impracticable for a consumer to have his service attached to a pipe between the works and the storage holder is that the gas which is delivered in our system is first sent out by the transmission mains, and these mains carry a higher pressure than the distribution mains. The pressure of the gas being very considerably higher in the transmission mains, the gas is pumped from holders by exhausters which are capable of furnishing the higher pressure. That is a part of the distribution system. I am particularly referring to the transmission pumping system. Holders are a necessity for that reason, to give a uniform pressure to the consumer, in order to put the gas out at a higher pressure and then have it reduced later on by governors to the distribution mains and thereby give [fol. 1096] the consumers a uniform pressure. I think they are all very important reasons.

Referring to oil contracts the gas that the Boston Consolidated Company, U-G-I. Baltimore Consolidated, Gulf Refining and the Standard Oil Company of New York were making was gas of approximately 525 British Thermal unit standard, a carbureted water gas.

In Boston, Massachusetts, they were operating under a British Thermal Unit standard and had been for years, of 528. They were all operating under the British thermal unit standard, but I haven't in mind exactly what B. t. u.'s they were sending out. I have 525 B. t. u.'s in my mind, as to what they were doing in Philadelphia. The average B. t. u. in works of the Public Service Corporation of New Jersey was given to me as 530 at the testing station. The testing station was not at the works, but I don't recall the exact distance. The average as made at the works was 533, and somewhat better. That was the Public Service Corporation of New Jersey, and that 533 was at the works, and it ran as high as 540 B. t. u.'s; the U. G. I., 525. The Standard in Baltimore was 500 B. t. u.'s. The water gas made was about 550 B. t. u.'s, but that was mixed with other coal gas. They, if my memory serves me, did not use entirely

the Gulf Refining Company's oil to make gas having a B. t. u. content of 550. They did use some of it. They told me that it was difficult for them to get exactly what B. t. u.'s they could get from a particular kind of gas oil, for the reason that they did have different kinds of oil during the period. They could not say that this figure that I have given you for the water gas was a figure which came from the Gulf Refining Company's oil.

[fol. 1097] The general information that I got from the various companies was that the oil was an oil which they could use in making gas under the B. t. u. standard, but that in the case of gas which was made under a candle-power standard, it was not so satisfactory. That would depend upon the candle-power standard, to a certain extent, but they gave it to me as a fact. I am speaking of the general information that I got and of specific information that I got from the United States Improvement Company.

I didn't have that basis 16 or 18 candle-power on which to go. We were making gas at that time of over 22-candle-power. That was in 1921. I went down there I know in May, 1921, and I believe that the date was about May 22nd or May 23rd. Prior to May, 1921, we had been making 22-candle-power gas, and we were making it at that time. We had always been making it since my connection with the Brooklyn Union Gas Company, and before the Brooklyn Gas Company was formed.

I did not reach the conclusion, that if the candle-power standard had been lowered, say from 22 to 18, that we could have utilized this gas oil to good advantage. In reference to the question of lowering the candle-power standard, my conclusion was that the gas oil offered by the Gulf Refining Company could be used for making a British thermal unit gas as the other gas companies had used it, but that for making over 22 candle power gas it would not be suitable for our requirement. I did not consider the question of [fol. 1098] whether we could make 16 or 18 candle-power gas with that gas oil because that was not a part of my problem. We were making candle-power gas. If we could have utilized it to the same advantage as we did another make of gas oil, other things being equal, it meant a saving of a cent and a quarter a gallon. I never figured out what it meant, our cost of operation for that year, because that

was not the case. If we could have used this gas oil with the same efficiency it would have meant a saving in operating expenses of about a million dollars for the year, but, I did not calculate the amount. It was 85,000,000 gallons that we were thinking of buying at that time.

When you boil it all down the million dollars could not be paid, because the character of the oil was such that it could not be used satisfactorily. During that investigation I was not oblivious to the fact that, if we could have used that oil to equal advantage, and other things being equal, a saving of a cent and a quarter a gallon would have meant an aggregate economy of approximately a million dollars.

What I did when I got home after visiting these various companies and making these investigations regarding the oil was to sit down and go over the data which I had obtained. Then I made up figures to familiarize myself with what advantages or disadvantages there would be in using or attempting to use the Gulf Refining Company's oil. I spent a great deal of effort on that, and I came to certain conclusions. I did not communicate with the Gulf Refining Company on this million dollar proposition at that time. [fol. 1099] I didn't make an investigation of the use of their oil by these different companies because I was looking to see what would be the possibility of our using the Gulf Refining Company's oil to the advantage of my company. I went through the whole question, and, after doing so, I wrote a letter to the president of the company, telling him my findings. I did not ask the Gulf Refining Company to furnish me with enough oil so that we could make a test through our machines, because at that time I first had to find out whether the oil was capable of being used efficiently, and I could tell that without a test.

The person representing the Brooklyn Union Gas Company who did handle the communications or negotiations between the Brooklyn Union Gas Company and the Gulf Refining Company was the President of the company, Mr. Jourdan. I was excluded so far as negotiations were concerned. My duty or function was ended when I communicated to the president. He asked for bids and he sent what was required. That is the practice of the company. In addition to sending my report, I talked with Mr. Jourdan, about it but I did not recommend to him that the Gulf Refin-

ing Company send us enough oil so that we could make a practical test of it by using it.

I recall having a conference with Mr. Jourdan. He had my letter dated May 25th, 1921. I forwarded that letter to him. I don't recall just how long after that it was that he sent for me and asked me about it. I know that we talked the matter over. Part of the conversation was allusion to [fol. 1100] the fact that by the use of this oil, if it could be made available, there would be very substantial economy, amounting to approximately a million dollars in our operating expenses. That was very apparent to us all, that it would mean a saving of money, provided the oil was suitable. That came up in the conversation.

Referring to my words "Other things being equal." With these two prices before me, in the first place, the sample sent us by the Gulf Refining Company showed a distillation test that was very much inferior to the distillation test as shown by the company from whom we were then purchasing oil. In other words, the Gulf Refining Company's oil showed a distillation figure at 700 degrees Fahrenheit of 68.5 per cent. The comparison with an average of a great many distillations of the oil which we were then using—the number was 178 distillations—the percentage of distillation of our oil as we were using it was 84.3. That means a better and more suitable oil for candle-power purposes.

I should be of the opinion that the oil which we were then using from the company with whom we then dealt might be better for B. t. u. purposes also, although we could not determine that until we actually had used it, but, my experience would lead me to believe that it would have been better.

Now if it had not been for the existence of this 22-candle power standard we could have used the oil which was offered to us by the Gulf Refining Company, but, not to equal advantage with the other oil. We might have had some saving if it had not been for the candle power standard, just how extensive that saving would have been I cannot [fol. 1101] tell. Mr. Jourdan had several conferences with me regarding the character of the oil. He was very anxious to ascertain what oil it would be more advantageous to us to buy on a new contract. I recall that he told me that he

wanted the matter looked into most thoroughly, and I did look into it very thoroughly. I do not know whether he asked the Gulf Refining Company for a sample large enough to use to put through our machines or not. Then after I made this investigation I made a report to him. In that report I said it would require at least a half or more of a gallon of oil per M to maintain the 22-candle power standard with the Gulf oil than with the oil now being used. I could not tell whether there would be any difference in its use if we had been on a B. t. u. standard, because I have never used the oil.

Then I finally recommended that "I would state it to be my conviction that a differential of not less than one cent per gallon would be the minimum under which we could even consider the use of the Gulf Refining Company's oil in place of that now being supplied us," I wish to make it very emphatic that I said "At least." I believe that it would be more than one cent. The difference should be at least one cent and that, in talking about it, I believe it would be more than that. The difference in the price was a cent and a quarter. The recommendation was, so far as what I said about it, that I would advise not taking the Gulf oil. I am saying now from conversations which I had. My report states that in my opinion there should be a reduction in price between the two oils of at least one cent [fol. 1102] and it also states different reasons in the report which are not covered by that question of a difference of at least one cent. In other words, there were factors entering into the question which in my opinion were against buying the Gulf oil. I have covered the matter in my letter exactly as I have presented it to the President and I sum it all up in my last paragraph by stating, "In conclusion giving due consideration to the two objectionable features last mentioned," I mean by that taking into consideration the objections stated theretofore. Taking everything into consideration that I have stated, "I would state it to be my conviction that a difference of not less than one cent per gallon would be the minimum under which we could even consider the use of the Gulf Refining Company's oil in place of that now being supplied us." I most certainly did consider the purchase of this oil very carefully. These are the conclusions and the opinion that I

formed after making these investigations. I did not conduct any investigations after this. I had numerous consultations. This letter relates to the relative quality of different oils. It relates to a question as to the advisability of the purchase of Gulf oil. At these conferences that was discussed about the same time as this letter was forwarded. There was another matter which had to be considered, which was discussed and that was the question of delivery by the Gulf Oil Company. There was this about it, that we could not or did not have an offer from the Gulf Oil Company of a quantity of oil sufficiently large to take care of our entire contract. I did not take it up with them. It [fol. 1103] was taken up, I do not know just how. They said they could not deliver a quantity sufficient to take care of the whole contract. I do not know that our president called for all or any portion of the quantity of oil. The fact that this company agreed to deliver any portion would not in itself lead to rejection of it, but there were reasons why it would not be to our advantage to take a quantity such as the quotation was about.

The Gulf Refining Company stated that they would supply us with a quantity less than the whole contract, and I haven't it in mind. I would not say that it is a disadvantage to purchase less than our whole contract at one time, but there are conditions under which it might be disadvantageous. They were unable to furnish us with our full requirements. That would mean that we would have to take part of our requirements from another company. At that time and under the conditions obtaining if we had taken a part of the oil from the Gulf Refining Company and the balance from some other company, we would have been obligated to mix the oils. We could not have kept certain works all the time on one grade and some other works on another grade of oil, it would have been necessary to mix the Gulf Refining oil, which had different characteristics, was not suitable for making candle-power, with other oil, which we were using, and it would have been a very bad operating condition to mix these oils.

We could not have arranged deliveries so that we could have sent constantly to the Nassau and Williamsburg Works. [fol. 1104] It was an operating condition, we could not do it, we could not have obtained the deliveries from either

of two companies if we were taking oil from the two companies so that we could have operated without the mixture of two oils both different in character.

The Atlantic Refining Company have made a bid for supplying the Nassau and Williamsburg Works with oil. I would not say that was because the draft of their barges is so great that they cannot get into our Gowanus Canal plants. I know that they made a proposition. They mentioned those two works. I don't know that the Texas Company cannot bid upon our supply because of the shallowness of our Gowanus Canal Works and docks. I have had it brought to my attention in this way, that an oil company would have to make deliveries by very much larger barges. They would deliver by tank steamers, in other words and those tank steamers we will say in the case of the Atlantic Refining Company would have to come from Philadelphia. There was a very strong idea on the part of the Atlantic Refining Company that they might be able to time the arrival of one large steamer and one smaller one so that they could keep us supplied. I had some conversation with the representative of the Atlantic Refining Company on that subject, some talk with him. I said, "That would be all right if you could surely supply us. Could you guarantee that we would have right through the winter our supply coming along regularly as you describe with this large steamer and the small steamer," and he said, "He thought he could. My answer to that was that "Unless you do more [fol. 1105] than think, why, it doesn't do me any good."

I think I had this conversation with a representative of the Atlantic Refining Company who came to see me in my office, and I have forgotten his name. I think it was Alling, before the writing of this report of May 25th or about that time. I recall it but I do not remember the date.

In May 1921, from memory that it was about that time, there was brought to my attention the letter of the Atlantic Refining Company which says, "Our proposition is to make a contract to furnish your Nassau and Williamsburgh Works 10,000,000." And this investigation and failure of guarantee on their part followed that.

I think the letter from them suggesting that we sever our contract and permit them to bid upon a portion, that is that portion of our gas oil requirements which cover the Nassau

and Williamsburg Works is what we have been talking about. I do not understand that they expected that we would sever our contract with any other company. I do not think the word sever was the proper word to use. These letters are not addressed to me. I know of them. I had my talk with Mr. Alling on April 13th, 1922, and there was a letter previous to that time. They stated in this letter that it was impossible for them to bid upon the entire quantity because of the draft of their vessels and they were unable to get into the Gowanus Canal plants. I do not recall that it is true of the Texas Company in years past.

In this report of May 25th, Exhibit 191 on the second page I stress two points, then stating that these two facts [fol. 1106] are particularly vital in our situation, would require additional investment for generating capacity and for separation in order to obviate the escape of any of this emulsion in the effluent from the works. * * *

In my final view expressed in the last paragraph, I was of the opinion that a differential of not less than one cent per gallon would be the minimum under which I would even consider the use of the Gulf Refining Company's oil. That took into consideration the paragraphs numbered 1 and 2. That included the problematical question of the increase in investment. It included an allowance for the additional investment for generating capacity and the separation, which, in my opinion, would be necessitated by the use of this oil.

The fact was this, that our opinion was that there should be a differential of at least one cent before we could consider the matter at all, and then if we considered it further there would be this question of how much additional would be due to the factors of increased apparatus necessary to handle the oil. I thought that I could not figure that out exactly, and therefore I said at least one cent. My thought was, and my method in figuring the amount meant to me that the least figure was one cent, and that it was my opinion that it would be more than that. The cost could not be accurately determined on the data that I had. That allowance was deemed by me sufficient to cover only the very minimum cost of expense of installation. That was [fol. 1107] one of the considerations.

I was of the opinion that some additional capacity would be necessary if the Gulf oil were used. There must be a dif-

ference of at least a cent before the oil is considered. I tried to express that I intended to advise the president that after a reduction of one cent was made then the question of capacity should be taken up. And in other words, that the question of capacity should not be taken up until after there had been at least a cent reduction. I did not figure out in money how much additional capacity would be necessary. I figured it out in apparatus that would be required. When I wrote down the words "at least one cent," that would have been a question of further expense. The additional capacity was included not in my one cent.

When I used this expression in my report, "Giving due consideration to the two objectionable features last mentioned," I considered that the cost of the apparatus which I have mentioned in this letter was not included in the figure of at least one cent. That is, it did not appear that there would be that additional cost, giving due consideration to the "two objectionable features last mentioned." At the time I considered that there should be at least a differential of one cent.

I have testified that I had in mind and realized that if I should buy oil at a cent cheaper, other things being equal, I would save a million dollars approximately. In making that report I did have that in mind. After my report was made to Mr. Jourdan I know what contract was made.

[fol. 1108] The president consulted with me then and said he decided that he would make a contract with the Standard Oil Company of New York at 5.50 cents. I was not present at the meeting of the Board of Directors when the contract was awarded. It is my understanding that the President contracted for oil at 5.50 cents. * * *

[fol. 1109] In 1921 at the time that we were considering this gas oil contract, we were making a carbureted water gas under the candle-power standard. In the year 1920 we produced an average of 17.58. So in order to comply with the 22-candle-power gas we made gas of 17.58 candle-power.

[fol. 1110] With reference to the character of the gas that we were making the averages of those months in 1921 are as follows: In January, 15.73 candle-power; in February 20.05; in March 23.76; in April 24.55; and in May 24.56. We made 22 candle-power gas for a period of three months prior to entering into the contract with the Standard Oil

Company. That is, three months in 1921 and no months during the year 1920 and during that whole time, prior to and including those three months, we had been on this 22 candle-power standard.

In January, 1920 we made 22.79 candle-power. That was made at the works. We took no candle-power tests at any point aside from the works. We made them at the works, that is the only record we had. During the three or four months of 1921 our candle-power at the works was as I have stated.

For each month beginning January, 1921, 15.73; February 20.05; March 23.26; April 24.55. In May, 24.56; In June, 24.62; July, 24.94; August, 24.87; September, 24.69; October, 24.26; November, 24.31; December, 24.15; the average for the year 1921 being 23.33.

The candle-power for 1920 tested at the works was as follows: January, 22.79; February, 19.73; March, 19.38; April, 17.91; May, 17.21; June, 18.22; July, 17.11; August, 16.36; September, 15.94; October, 15.54; November, 15.46; December, 15.36; being an average for the year 1920 of 17.58.

At that time the law provided that the 22 candle-power should be measured not less than one mile from the works. From our works to a distance of not less than one mile [fol. 1111] from the works on the average the drop would be a candle; possibly as much as a candle and a half on the high gas at the City testing station. I think it would be approximately as I have stated. That is based on operating experience; the general experience of different operators, that that is about the drop there would be. There is absolutely not a drop of at least two candles. I think it is between one and one and a half candles.

In 1920 if we delivered about fifteen candle-power, in compliance with the law, one mile from the works, it would be, if you allowed a candle, about 16.6 and if we allowed a candle and a half then that would be a little over 16. I think that is about it. It depends upon weather conditions, upon the condition of subway construction, where the pipes go, and matters of that kind also upon the engineers as to how much drop there is.

Taking into consideration my knowledge of the candle-power at the works and my judgment as to the candle-power

a mile away the particular month in the year 1920, when in my opinion the candle-power a mile away from the works was approximately 22, I would say was in the month of January. I would say, taking by and large, from February to December to February 1921. The only month where there would be any question at all would be the month of February. That might or might not have been 22 candle-power a mile away from the works. We made 20 at the works and that would be a doubtful case. It would have been 22 at the measuring station on a number of days, but I [fol. 1112] think on the average it is doubtful if it would have been 22, but if you lost a candle and a half, you would be within a fraction of a candle. The average during that month a mile from the works was below 20 based on a candle and a half drop, it will drop something.

The City makes tests at certain stations and they used to send me reports on a postal card of their tests as re*e*prded for the different stations which they had. I do not recall having sent any of our men to the City testing stations to see whether the City's e*x*mployees were correctly testing it. The City did not say that we were not delivering 22 candle-power gas. I did not accept those reports as being of a nature that I could use them really for comparison.

Referring to the annual report of the Brooklyn Union Gas Company to the Public Service Commission of the State of New York for the year ended December 31st, 1920, I reported the figures to the auditor for my candle-powers as made at the works, they having made one test every hour at our works during the day, and I gave the average for the day and then I averaged those. I also reported the average of the City tests as made to us on these postal card-, my understanding being that they made one or two tests at each of those stations in 24 hours as against the 24 tests that we made. These are the two different figures that are shown in this report to the Public Service Commission. The figure there for, "City test corrected," means the average City tests that we had. We correct those tests [fol. 1113] by *by* averaging them. It is an average of the City tests. I think that the test was corrected by temperature and barometer, the same as we have our own corrected. That is my impression. I do not mean to say that we did not correct the City tests. The comparison was made on

the same basis. They were corrected, on the same basis of temperature and barometer, and that is technically known as a correction or temperature and barometric pressure, and the correction appears both for our own test and the City tests. The word "corrected" had reference to that technical correction by temperature pressure and barometer. I believe the report which the City sends in had been corrected for temperature, barometric pressure and temperature before it was sent to me. The correction as made here by the Brooklyn Union Gas Company under my supervision. The tests as made by the City, as I understand it, were corrected for temperature and pressure. The term "corrected" refers to a correction made by the City so I understand, and our tests were corrected at our works, and our tests were corrected at our works as they were made. The figure means that both gases were corrected for temperature and barometer.

Of course I do not know just what the City did do. I was not there, I did not visit the station, but it is my impression that the tests there would certainly be corrected. They were corrected by the City to compare with ours. The figures which I have opposite the "Corrected" are the same figures which are reported to me by the City and the fact that they are corrected is shown in both cases.

[fol. 1134] I used the identical figures which I received from the City. I averaged these figures; these City's tests. I had to do something. That is not what I mean by corrected. I did not conduct any investigation to determine how the City was making their tests. The Company reported to the Public Service Commission in its annual report for the year 1920, for the City test corrected of the candle power of our gas for the year 1920. They reported for the whole. Citizens Works the City tests are as reported by them 13.02 for the so-called Citizens station; 10.79 for the Fulton; Nassau 13.81; Williamsburg 12.76; and the Metropolitan 12.59, and for the average 12.57.

1921, Citizens 18.99, Fulton, 18.56; Nassau, 18.45, Williamsburg, 18.99; Metropolitan, 19.37; the average of those reported tests was 19.04. I have read those figures from the report of the company to the Public Service Commission for the particular years. * * *

[fol. 1115] At the Fulton works I believe we withdrew in May, 1923, a safety steam engine, 16 inch and 12 inch that had been in use, approximately for about ten or eleven years prior to its withdrawal. It was not useful at the Fulton works and we withdrew it. I don't know what kind of shape it is in now. As I recall it, it was rather small for our use. We turned the engine over to our construction people and they undertook to dispose of it. I [fol. 1116] believe they have been trying since to sell it. It was not operating at the time that we withdrew it. I don't remember how long it remained idle. According to my recollection, it was not in use when we withdrew it. I know it was not in use, and I don't remember what its condition was. I think that it was not an engine that would be required there at the Fulton Works. It was in condition so that it would run. I don't recall the date when we stopped using it, at the 12th Street station. I don't know about the withdrawal of its diaphragm.

At the Metropolitan Works we withdrew part of the waste heat boiler platform in August, 1923. We had to make a change in the platform in order to accommodate the construction of other waste heat boilers. The platform was made of steel. I rather imagine it may have been used in other construction work. I cannot tell where it was used, but, it undoubtedly had a use, not as a waste heat boiler platform, not in that particular place. The waste heat platform is a platform on which the waste heat boiler rested, as I say, there is a platform under the waste heat boiler. It extends in front of the boiler so that a man can walk on it. I should say it would be approximately 10 or 14 feet long, and in front of the boiler probably about 6 or 8 feet steel plates. The thickness would be approximately three-quarters of an inch in front of the boiler. I cannot state as to the entire quantity which was withdrawn; at the Citizens Work there was a blower and bedplate withdrawn. It is my impression that the engine was connected to a Sturtevant fan, and, when the new machines were put in, the blower and also the engine were removed.

[fol. 1117] The engine was a horizontal type engine and it had a horsepower of 190. That is one engine. That was attached to a Sturdevant fan blower which furnished the air formerly to the generators, the original Williamson

generators, and when the improvements or changes were made at the Citizens Works and that blower and engine were no longer useful there, they were taken out. The bed plate was underneath. It was a steel bed plate which extended underneath the pan, and there was one under the engine itself. The bed plate was placed on a concrete foundation which extended above the floor of the generator house. Then upon that bed plate, which I would say from memory was about an inch in thickness, was placed the engine. The engine itself was a single cylinder engine. The bedplate would be about ten feet in length and approximately about two and one-half feet in width. The engine, blower and bedplate had been in use about eleven years. They were withdrawn because they were putting in improvement making extensions in the works, and they were in good condition to run when we withdrew them. They were withdrawn and placed under the jurisdiction of our construction people. I believe they were offered for sale. I haven't any record whether they have been sold or not.

At the Metropolitan Works we had a Fordson Tractor. Of course, that does not appear on my list of important physical changes, but there was a Fordson Tractor at the Metropolitan, and I remember that it was withdrawn. It was used for carting purifying material, trucking it, and it was used for moving coal. If I recall it was pretty well used up. I was told that it was shot to pieces. That is the [fol. 1118] way an automobile man speaks of an automobile that is down and out.

Now, at the Citizens Works we moved a Bucyrus shovel from our works over into the construction department. That was not shot to pieces, it was in fine condition. We had two of those Bucyrus shovels. One of those shovels was used in excavation work, and it was also used for unloading coal. I will say that those shovels are used for moving ashes, loading ashes, and for various purposes. One was in use in the operating department and the other in the construction department. We withdrew one from the operating equipment and turned it over to the construction equipment. Its condition was very good when we turned it over. Both of those shovels were working in the operation of the works for a short period. They had two shovels in the operating works, and they took one out and

put it in the construction department, which left one in each department.

I do not remember the exact condition of the Edison storage battery on our car No. 60. I know there was such a battery and I know that it was used. Just the length of time I have not the figures for. The battery was, when it was retired, worth some money; $460 was the way it was figured out, and I should say that that was probably about it. I do not recall who made the figure on it. I did not have anything to do at all with making the figure. I cannot tell what its condition is now. We also withdrew a New York Safety steam engine at the Nassau Works which had been in use for eighteen years. There was an engine retired at the Nassau Works and that was for the year ended December 31, 1923, according to my recollection.
[fol. 1119] All the engines have guards, but it was a 12 by 12 engine, I think, that is, the cylinder. It was withdrawn; it had been used in connection with a Connellsville blower of a small size. The engine was withdrawn to make way for other changes in the Nassau Works. It is in good condition, but it was of a small size engine.

I recall at the Metropolitan Works we withdrew in November 1922 coal hoist mast and stiff legs. It was not taken as an important physical change, but I can tell about it. The mast and the stiff legs also were taken out and sold for scrap when the new coal-handling apparatus was installed at the Metropolitan Works. You have a steel mast made of latticework. It is a square shape of lattices crossed. That has what they call a boom, which is also latticework, which extends from about two-thirds of the way up the mast out and to which the coal-hoisting gear—the coal-hoisting steel cables are attached. The stiff legs are supports back from the mast down to the ground, where they are attachel to a concrete foundation and they take the thrust of the weight of coal as it is carriel up to the hopper. In other words, it is a stay which keeps the mast from going over backwards. The latticework was disposed of, and the stiff legs, I guess were broken up for scrap. I do know about the Cumberger & Vreeland gas engine at the Plymouth Street Station. I do not recall having withdrawn at the Metropolitan Works one steel frame galvanized covered still house. It was made into a quarters for the meter

department—made into an office building. It is not out office building, but it is used by the Meter Department. [fol. 1120] I want to be sure now that I am answering the question that that was the still house at the Metropolitan Works which you say was withdrawn, it was not used after the War as a still house and it was made into a building for the use of another department. I said it was used as an office building for the meter repair department and it was also used for some storage purposes.

(Exhibit No. 146, Sheet 1, Metropolitan Works, Still House marked T.)

Still house marked "T" is the one that was withdrawn in November, 1922 and still is in service. It was placed in the construction department at that time and they in turn turned it over to the meter shop—the meter repair department, and they are using it today.

At the Metropolitan Works we withdrew in May, 1922, one Bristol recording pyrometer there and that had been installed just about 1911. That Pyrometer was exchanged with the Driscoll Company for an improved type of pyrometer. It has been exchanged since May, 1922. At the Metropolitan Works we also withdrew seven recording pyrometers. The same thing was done with the seven. They were sent to the Bristol Company and they were exchanged for a more modern and improved type of pyrometer. We also withdrew two horse wagon loaders, Haiss, I think is the name of the maker. They have a small motor which actuates buckets on a link belt and they shovel the coal into the buckets and the buckets must dump into a wagon. My records show they had been in use since 1909, they have been in use I should say about three years. They were withdrawn from the Williamsburg Works, and sent [fol. 1121] down to the Nassau Works and they are at work there, I think. They were working during last year at the place where we stored the coal on Kent Avenue during the reconstruction of the coal storage at the Nassau Works. I believe they are in use today. I do not know whether they are in use right at this particular day, but they are being used. They are a part of my equipment. We also withdrew at the Citizens Works a one ton coal grab bucket. It had been in use for, I think, about ten years, eleven years. That

bucket was taken out and replaced by a bucket of a larger capacity. I believe that that bucket was at that time held in reserve for possible use at some other place.

At the Citizens Works we also withdrew four Bristal pyrometers. We exchanged those too. We took out of the operating department, a concrete mixer, at the Citizens Works and turned it over to the construction department. I do not know what they are doing with it today, or right now. I do not know whether it is being offered for sale or not. I know that when we turned it over to them it was in good working condition. I remember that we withdrew some belt conveyors, those were really a belt conveyor that runs on rollers and then a motor is attached to them. I think those were used at our Kent Avenue coal storage during last Summer. They are usable, as far as I know. It is my impression they were used the early part of this year. I am speaking from memory on that. I know about the withdrawals of the photometers. We had one at the general laboratory. The photometers have been taken out and dismantled entirely. They are for the purpose of making candle power tests. We no longer need them for that purpose. They have been taken out and the parts have [fol. 1122] been boxed up. I do not recall that other disposal has been made yet.

At the Williamsburgh Works I believe we withdrew three Davidson pumps in December, 1923. They had been in use for about fourteen years. These three pumps were taken out and turned over to the construction department and the three pumps were replaced by three new centrifugal pumps, the Alberger Company, we found to be a pump more suitable in capacity. At the Metropolitan we withdrew four Terry steam turbines in November, 1923, all of which had been in use for twelve years. We, during last year, put in a larger size blower at the Metropolitan Works on their machines—a blower capable of *of* furnishing more air per minute, and the blowers themselves were changed. The blowers had a greater capacity, and the turbines in connection with the blowers gave us the additional capacity for air at the Metropolitan Works. They were not inadequate as they then were, good as to capacity. They were all right as to condition, but we replaced the four 212 horsepower turbines with four new 412 horsepower; so you can see where the additional capacity would come in.

[fol. 1123] Brooklyn, New York, March 14, 1924.

ROBERT W. BUSH

Cross:

The four Terry steam turbines that we withdrew from the Metropolitan Works in November, 1923 had been in use for about twelve years. We also withdrew two of the same type turbines from the Citizens Works at the same time, those had been installed or in use for a period of about twelve years. We withdrew them because we were getting a greater capacity for delivering air to the generators at both the Citizens Works and the Metropolitan Works. We arranged to put in larger blowers, blowers of larger capacity, to be used in connection with the turbines. The change gave us an additional capacity for the quantity of air and for the pressure of the air. The blowers were exchanged and in some cases there were new ones furnished. I mean by that, that the blower and the turbine is considered as a unit, and the blowers were increased in size. In the case of the Metropolitan Works and the Citizens Works, the turbines were all practically the same capacity. That is, they were sufficient to take care of the increased blower capacity. As finally withdrawn, the unit was of a larger capacity. I wouldn't say, that these turbines were inadequate, that is, they were still capable of furnishing the amount of air that they had been furnishing before, but we wanted to get a larger delivery, more air. That was the same reason we withdrew the four turbines in the Metropolitan Works. Those turbines were turned over to the construction department. It was in some cases an ex-[fol. 1124] change, which they made. Just how that was done I haven't in mind. I know that in some instances the smaller unit was sent away and, in order to save time, we got a new unit in its place. At The Nassau Works, we withdrew two New York safety steam engines, one 12 by 12 and one 10 by 12. Those were turned over to the construction department. They were actually retired in November 1923, so far as the works was concerned. They were turned over to the Construction Department and I think they were probably disposed of. I think one of them had been in use about eight years and one of them had been in use about five years. They were not required for our

use at the Nassau Works; that was the cause of their withdrawal. We had a capacity without those engines. When we increase our capacity at these various plants it often necessitates the removal of quite a few of the engines and turbines and blowers, and things of that kind. They are not required for our purposes. We also withdrew three Davidson pumps at the Williamsburgh Works. Those three pumps were withdrawn and they were replaced by three other pumps of the Alberger type. The withdrawal of a Cadillac touring car in our general statement of equipment does not come under my jurisdiction. I do not know about it. None of the cars, the Mack trucks nor the National touring car come under my jurisdiction. The withdrawal of a freight elevator at the Metropolitan Works—The Metropolitan Branch general structures would not be under my jurisdiction. I haven't any special thought about this freight elevator. I know that changes were made at the Metropolitan branch in a general way, and I undoubtedly could say that things were taken out. I spoke of withdrawing at the Citizens Works a scoop conveyor and motor which [fol. 1125] had been in use just one year and I understood it to mean a belt conveyor with a motor. I think there were two which were withdrawn. I testified about that. They had both been in use only for a comparatively short time. The blowers that were retired were a fan furnished by the Sturtevant Blower Company of Massachusetts. The blowers that are in use today are different from the blowers that we withdrew. There is a progress in the art, for instance, the present blowers are of a more sturdy type, they are built stronger. They have a larger capacity and, on account of their greater strength, it is possible to run them at a higher speed and therefore we get a delivery of a greater quantity of air and at a greater pressure. There is some progress in the art, too, as to the generator sets. As to the difference between the generator sets that are on the market today and the ones that were installed eight, ten or twelve years ago. Generally speaking, there is a very marked difference in the size of the connection, in the size of the wash boxes of the machines. Take a three-shell machine 12 feet, there is a difference in the capacity of the three-shell machine that we have put in just recently at the Citizens works as distinguished from the three-shell ma-

chines that we have in the other works, purchased say ten years ago. The three-shell machines at the Nassau Works, which were the ones installed, if my memory serves me right, some around 1904, were called the Meyer sets. They had an oval type generator which had a division wall in the center, and the air in going up the machines went up through two compartments. They were machines that I would not say are quite as much up-to-date as is the three shell machines now. It is practically the same process of [fol. 1126] making gas though generally speaking the difference between the capacity of our 12 foot machines, the recent installations, and the machines called the Meyer machines is those Meyer sets used to make around two and a half million and the recent 12 foot sets are capable of making four million. The other three-shell machines that have been installed, for a period of ten or twelve years, besides the Meyer machines are the machines at the Equity Works. Those are 8 foot 6 machines. They have been installed that long or longer. We have one other 12 foot three-shell machine located at the Nassau Works and that s not a Meyer machine. That has about the same capacity as the three-shell machines at the Citizens Works. That is, about four million and was installed two years ago or thereabouts. We haven't any other three-shell machines, aside from the Meyer sets that are ten or twelve years of age, that have been in use that long. The oldest three-shell machines we have in use would be at the Equity Works. They are 8 foot 6 machines. The oldest 12 foot machine that we have would be the Meyer sets, speaking now of the three-shell machines. They were installed approximately in 1904. They are about twenty years old. We have reconstructed them and made changes to the connections, quite considerable changes, not recently. We have put a new generator on one of them. I should amplify that answer by saying that also there was a new generator put on the Meyer sets at the Williamsburg Works. I have already testified to that. All our other 12 foot machines have been installed since 1904. I think I have accounted for all the three-shell machines, that is, there are six of them at the Citizens [fol. 1127] Works. There is one at the Nassau Works, and there are six Meyer sets in the company. All the three-shell machines at the Citizens Works are recent installa-

tions within the last two or three years. We didn't have any of the three-shell machines there before. We had all Williamson sets.

Regarding the Williamson sets, their capacity has been increased so far as the shell of the machine goes. That is, if you were to buy a Williamson set ten or twelve year ago, the capacity of that machine would be less than the 12 foot Williamson machine which you could buy today on the market with the improvements which we have put on it. There are no improvements that have been put on it by the Williamson people. That was done by our own people. In the general practice, if you went out and bought a 12 foot Williamson machine today, you would not get the same machine that you would have purchased ten or twelve years ago. The Williamson machines at the present time are built or now have larger connections, they have a larger wash box, a larger take-off from the machine, a larger purge, a larger hot valve, and they are arranged to make a greater capacity. The difference in the capacity of the Williamson machines, the 12 foot machines is as follows. The Williamson 12 foot machines as originally installed made 2,000,000 cubic feet per day per set and today, the Williamson machines so far as the figures I have in my head are concerned, are about three and a half million. If you went out today on the market to a vendor of Williamson machines, you would not get the same machine that you got ten years ago when you bought a Williamson machine, having approximately a 2,000,000 cubic foot capacity, but you would have, if you made a purchase now, a Williamson [fol. 1128] machine having a greater capacity than 2,000,000, and the amount of the increase in capacity I have stated; it would vary from about 2,000,000 in the original set to somewhere around three and a half million in the present set. The tendency of manufacturers has been to increase the capacity of the machines. The capacity is largely governed by the size of the connections and the design of the machine. The Williamson machine that is now being sold on the market is different in design from the Williamson machine purchased ten or twlve years ago, to the extent that the machine is somewhat of a different shape, and the carburetor and the superheater, and these changes which have been made that I have spoken off—

the connections and the take-offs and so forth—all make the machine to be in appearance a larger machine, looking at it. * * *

[fol. 1129] We have recording calorimeters in our work. The purpose of a calorimeter is to determine the number of B. t. u.'s in the gas which is being tested. We make tests of the gas as it enters the territory of the subsidiaries at the Newtown office. That is since the Public Service Commission established the locations for testing, which was some time late in the year 1922. To-day, we are making regular tests of B. t. u. at Newtown and they are in a building which is at the same location as the office of the Newtown Gas Company. I have data here showing the result of those tests, taken by our men and by the Public Service Commission's men. In the month of January 1924, the average B. t. u. tested at all the works was 583. The average of the Brooklyn Union Gas tests at Newtown for January 1924 was 562 B. t. u.'s. The average of all of the Public Service tests for January—561; within one [fol.1130] B. t. u. of what our tests showed. With reference to a particular works I cannot tell where the gas comes from. The gas as tested at Newtown might be a mixture of the gases from different works or from different holders. I have given an average figure of the B. t. u.'s as shown by the tests that we made at the Newtown testing station. There are three testing stations; at St. James Place, at Myrtle Avenue and at Newtown. We test also at each of the works. The Public Service Commission also make tests at the St. James Place, testing station, at the Mytle Avenue testing station, and at Newtown station. Their men do not make any tests of our gas at the works. For the month of January the average of the company's tests at the works was 583 B. t. u.'s. The result of three tests by the company at the several stations other than the works was: St. James Place; 570 B. t. u.'s; Myrtle Avenue 561 B. t. u.'s; Newtown 562 B. t. u.'s. The result of the Public Service Commission's tests at the last three mentioned locations was: St. James Place 569 B. t. u.'s; Myrtle Avenue 560 B. t. u.'s and Newtown 561 B. t. u's. The average of all the works test for February 1924 was 583 B. t. u's. The company tests at the outside stations: St. James Place 567; Myrtle Ave-

nue, 564; Newtown 566 and the Public Service Commission tests at those outside stations: St. James Place, 561; Myrtle Avenue 565; Newtown 566. The Myrtle Avenue Station is at the corner of Myrtle Avenue and Himrod Street. Himrod Street is up in Ridgewood. It would depend upon which plant you took the distance from to determine how far it is from the Newtown Station. As an operating condition I would say the Myrtle Avenue and Newtown Stations are running just about the same. They could not come [fol. 1131] very much closer than about two B. t. u's in one case, and one B. t. u. in the other. In January the Public Service Commission's test was 590 at Myrtle Avenue and at Newtown it was 583. The tests made by our men at the same place for January 1923 were 593 and 589. In December at Myrtle Avenue the Public Service Commission test was 562 and the Newtown test was 562, and our own tests, the Brooklyn Union Gas Company was 563 at Myrtle Avenue and 563 for the Newtown Gas Company. I could not explain what the cause for the variation of the tests between Myrtle Avenue and Newtown would be. It would unavoidably be at variance slightly at different times. I would not think it would pick up any B. t. u's on the way out there. Our man makes the test very closely to the time that the Public Service Commission men test. That is as far as we can get to it. I think we make more tests than they do. Sometimes the Public Service Commission man does not get around to one of these stations in a day. My testimony is that in the days of candle-power the City made two tests and we made hourly tests. There is not so great a difference now between the number of tests made by our men and the number of tests made by the Public Service Commission men, but in the case of ourselves we might make a few more tests in the aggregate than the Public Service Commission would. What I say has reference to the outside stations and we still make hourly tests at each of the works.

I examined into the question of the coke oven process of the Coppers Company and visited the Seaboard By Produce Coke Company and I visited and went over the plant at Chicago. My investigations have shown me that [fol. 1132] at the present time, it would not have been to the advantage of this company to install a coke oven plant,

because when you get into a coke oven proposition you have to consider the methods of disposing of the large amount of coke which is made and you have to take into consideration the cost of the gas, the question of how the price of oil compares, the question of how you get your coal. You also have to take into consideration that you probably will have to spend a great deal of money and you have to work out whether in your opinion the investment would be justified by the gains; so far we have decided that it is not a proposition for us to take. A few years ago the gas oil reached a pretty high mark. We paid a trifle over 12 cents a gallon, and today it is down to —our last contract was 4.8 cents. At the time that gas oil reached 12 cents a gallon we had a great many discussions on the question of the advisability of putting in a coke oven process. We discussed it prior to that time, too. I think a great many gas men were discussing it at that time. The excessive cost of gas oil, and at that time indications that gas oil would be getting less—would be scarcer—was a thing that caused everybody a great deal of concern. They were prophecying at that time that the supply would be getting less and less, and that, of course, would have a tendency to influence the price. That is one of the reasons why some people urged installation of coke ovens, and of course oil has gone down and if we had put them in we would have made a great mistake, so it is not always possible at the time to determine definitely in a short period whether a change should be made. That was a time when we were considering the matter. I am not anxious to see it go to 12 or 10 cents. At present time the price of gas oil [fol. 1133] is certainly down; it is lower. We are considering the advisability of installing coke ovens. We do not drop these things. We do not simply say, because for a period there has been high oil, for instance, that we are going to act on that comparatively short period when there is high oil. It is too big a question. It involves too much money to jump at a thing when you cannot see very surely, so far as it is possible to see surely, just where you are coming out. I do not know whether gas oil is going back up to 12; it is entirely speculative, and it appears to me that although gas oil may increase in price over what it is right now—my impression is it may, but it is quite a

long cry to 12 cents a gallon. I heard that the Kings County was thinking of putting in a coke oven gas apparatus. I cannot say as a fact whether they have reached a conclusion yet in regard to it. As to the Consolidated, I keep myself fairly in touch with their situation, and I have known for a fact that they have discussed the question of putting in a coke oven process, but I do not think it has been concluded yet. They already have some coal gas apparatus, so that if they put in a coke oven plant, they would have use for their own coke, right in their own plant. We use coke. In this process there is a very large amount of coke in the by-product coke oven plant. We could use that in our water gas generators if we could get it into the generators. I would not say that the coke was a residue from the process. It is naturally made during the process and it is a product. I have looked into the question, however, and have decided that it is no advantage to our company to install one yet. I have considered the idea of a central plant for the company.

[fol. 1134] I have the data showing the operating results for January 1924. They have not been made up for February yet. The reports come in to me daily from the different works showing the quantities that is, if you had the month of February under consideration, the quantities would be shown then about a week after the 1st. I get daily reports that is, the next morning these daily reports come in. The reports would have to be all checked over in my office, all additions checked on the books, and it would not be long after the first of the month that we would have the quantities. What I have in mind when I say we haven't them made up, is that the sheet called "Cost of manufacture sheet" has not been finished in the auditor's office.

Practically all of the new equipment that we have installed at the Citizens Works was being utilized in January 1924. I had the three waste heat boilers in operation at the Citizens Works and the stoker fired boilers had not been in operation for any length of time. They had been, [fol. 1135] as I described, tried out, the mechanical functions of the stoker had been tested, but I haven't results that I can give. I think that is when they would be fully utilized in the month of March but I haven't got any data

showing whether there would be any saving by their use as yet. We had our generators the new installations in operation, during January. I said that I thought they would probably make more gas when they went into operation and that as to the question of the cost of the gas I could not as yet testify and that I thought the price per M would probably be a little lower. So far as the generators are concerned, our use of the quantities in the Citizens Works in the month of January, 1924 as I recall it, does not show any such result as that. The Citizens Works used more generator fuel and more boiler fuel than the Metropolitan, to make a thousand feet of gas in January compared as to quantities, and not very much higher than all the others. As to boiler fuel, the Citizens was a little higher than all the other plants, due to construction work going on, the fact that the contractors used a considerable amount of steam which is not reflected in the cost per thousand figure or in the quantity per thousand. There is much less construction work going on at the Citizens Works now than it was. There is some work going on which is necessary to finish up. Unless we make some further changes there we should be through in the course of a couple of months, I should say. That is now unless we start in on something else. We haven't put in the charging machine yet. I expect to install more boiler capacity. The month of February 1924 results of the quantities for generator fuel at the Citizens Works showed 33.40 pounds per thousand; Fulton 31.24 pounds per thou- [fol. 1136] sand, Nassau 31.95 pounds per thousand, Williamsburg 33.16 pounds per thousand, Equity 32.87 pounds per thousand, Metropolitan 34.61 pounds per thousand. In that one month the Metropolitan used more generator fuel than any of the other plants, with the Citizens Works second. That was the operating condition at the Metropolitan Works, comparing it with the operation at the Citizens Works. That is what they actually did use in fuel. Usually the Metropolitan uses less, that is about the same as what they used in the month of January. The number of pounds used in January 1924 generator fuel, for each works was: Citizens, 34.26; Fulton, 32.45; Nassau, 34.02; Williamsburg, 33.77; Equity, 32.53, and the

Metropolitan 33.80. In the month of January there were two plants exceeded the Metropolitan—the Citizens and the Nassau. For the month of January, the Citizens used 33.77 and the Metropolitan used 33.80. One reason why during February the Metropolitan required more generator fuel than any of our other plants is that in the month of February the Metropolitan used part coal and part coke. They were not on a single fuel for the entire month. That has a bearing on the operating results. I have noticed that the Fulton, during both months, used less generator fuel than either one of the other plants and that is true throughout the entire year 1923, I would say, from memory, they used nothing but coke, also they were, as I have described before, placed on a uniform make of three machines throughout the entire year. That was their job, to run the machines and run them on coke all the time and to run on a uniform make. That is a matter which makes for more uniform results. The quantity of boiler fuel used at each of our plants during the month of February converted into [fol. 1137] pounds, the liquid is 4.55 and the solid fuel 9.75. That is not a conversion figure. That is just actual requirements. For the month of January boiler fuel at Citizens Works was 17.75; for the Fulton 14.10; Nassau 14.54; Williamsburg 16.42; Equity 17.52; Metropolitan 11.13, average 14.89. For the month of February Citizens 16.12 pounds; Fulton 13.26; Nassau 15.18; Williamsburg 15.62; Equity 17.90; Metropolitan 11.54. In January the greater quantity of boiler fuel was used in order to make a thousand feet of gas at the Citizens Works and I have explained that by reason of the construction work going on, this figure of 17.75 includes the factor of steam which was used by the contractor. I have not got that separated in any way, but a credit is made to operating expenses upon the cost sheet. We charge the contractor for the use of that steam. At the Citizens Works in the month of January there was a deduction made, that is a credit to the Citizens Works of .0099, or about one cent per thousand. That credit was made as against the Citizens Works. During 1923, that charge appears in the total boiler fuel as reported used. We made the charge as against the construction department, that is, it is simply a record we keep indicating how much of that fuel was consumed for the

contractor's work, and how much was consumed for our gas industry. We rendered a bill to the construction department and we also billed for some steam to the distribution department. They were using steam for transmission pumping at the works. That figure was charged off. We rendered an account, and it appears as a production adjustment. The course was that I submitted my figure to the auditor and the charge was made against the depart-
[fol. 1138] ment. The company was reimbursed that amount in money from the contractor. I think I know as to exactly how the auditor handled that. For instance, in the case of the Distribution Department we figure from the steam meter how much steam was used by the Distribution Department covering the month's period. We notify that department, the Distribution Department, we send them a copy of what we send the auditors, and that charge then was transferred from the works cost, the credit was made there, and it went against distribution cost; that is the way I understand it. An outside contractor was working at the Citizens Works and he used some of this steam. He did not pay the company anything for the steam he used. The charge was transferred as against the construction department and that appeared in the cost of whatever apparatus or whatever work the steam had used for. There was a credit allowed against operations and a charge against construction, that was the method. This charge for steam for transmission purposes, is something that is continued monthly throughout the year 1923. We also make a charge with the Distribution Department throughout the year 1923 for the use of steam by the contractor. That goes to transmission. The charge for construction is charged to capital account. That was true also in 1922, that the quantity of boilers fuel as shown on our figures there, also included the fuel to make steam for the transmission of gas as well as for the contractor.

As to how much steam is used by the contractor, we figure it on the size of the engine, in case it is being used by an engine, the size in horsepower of that engine, the size of the steam pipe which admits the steam to the engine, and we figure out from that the quantity of pounds in steam; and we take our figures as based on the quantity [fol. 1139] used for the previous month, so we will be able

to make a calculation to go in with the current month's figures. In comparing January 1924 and January 1923—January 1923 total cost at Citizens Works per M was 53.01. That is for the year—in January 1923 the cost at the Citizens Works was for the year an average of 53.01. For the month of January 1923, the cost to make a thousand feet of gas at the Citizens Works was 49.64. In the month of January 1924, it cost 52.47 cents a thousand, 2.8 cents more per M and in 1924 over 1923, it shows a difference which is largely due, and very largely due to the cost of repairs. There is a large difference between the two periods. I have taken a figure here as comparing with the year's figure. The item of repairs for January 1923 was 7.47 and the amount in January 1924 for repairs was 3.73. The repairs are about four cents less in 1924 than in January 1923. To account for my statement that the increased cost of production in January 1924 as compared with 1923 was due to an excessive item of repairs during the month of January 1924. I have taken here the month of January, 1924 and that figure is 3.73 cents. I have given my repair figure for the month of January 1924, and that figure for repairs for the Citizens Works total maintenance was $.0373 or 3.73 cents. The figures are mixed. The figures for the two years, month of January 1923 and 1924, at Citizens Works for cost for repairs for those two periods and are as follows: Cost of gas or repairs; First, January 1923 the item of cost of repairs is 7.47 and for January 1924—3.73. I think those are the same figures that I gav a few moments ago. I have made an error in my testi- [fol. 1140] mony concerning the cost of gas in January 1923 and the cost of gas in January 1924 at the Citizens Works, that is to say, the cost in January 1923 is greater than in 1924. I know where the mistake is. I have given the figure for the whole year 1923 as the January repairs. That is where my error is. I wish to make a correction in my testimony with reference to these comparative figures of cost of production of cost, an item of repairs in the months of January 1923 and January 1924 respectively. The cost of gas at the Citizens Works for 1923, per M cubic feet made at the Citizens Works fas 50.46 cents. For January 1924 the total cost per M at the Citizens

Works was 52.47 cents. The cost for repairs at the Citizens Works in January 1923 was 4.18 cents per M and the cost for January 1924 was 3.73 per M. The gas made at the Citizens Works for January 1923 was 409,801,000 cubic feet. For January 1924 the make at the Citizens was 390,346,000 cubic feet of gas. I did give the gross cost. I did not understand that the adjustments were wanted. I had my cost in 1923 right before, of 49.64 cents, instead of 50.46 the net cost for January 1923 is 49.64. The reason why it cost us 2.8 cents more per M to make gas in the Citizens Works in January 1914 over the cost of January 1923; there is about one-half a cent difference due to repairs in favor of 1924. I have confused the two figures and the figure in January of 1924 is less for the repairs by about a half a cent that it was in 1923. My testimony that the cost of gas in January 1924 exceeded the cost in January 1923, because of the larger amount spent for repairs is an error and I wish to correct it. The reason why it cost more in 1924 that it did in 1923 was the [fol. 1141] cost of generator coal; generator fuel was greater in 1924 than in 1923 and the cost of oil in 1924 was slightly less than it was in 1923. The total production expense, that is total meterials in 1924 was nearly five cents greater than it was in 1923. The cost of labor was about the same. The cost of labor was practically the same. Total cost of the labor and materials was greater in 1924. The repairs in January 1924 and all the time of each year—were a little less in 1924. The total cost in 1924 exceeded 1923 by three cents. There were adjustments made which bring us down to the final cost, allowing for the credits, and the cost for the Citizens for January 1923 was 49.64 cents and for 1924 was 52.47 cents. The repairs were slightly less in 1924 and the oil was a little less; the labor was slightly more in 1924 and the only figure which would account largely for the difference of two cents is the difference in generator fuel and that is about 2.9 cents different. The reason why coal in 1924 at the Citizens Works cost about 2.9 cents more per M than in January 1923 is the price of coal increased in 1923—during the year. Increased in April. It increased again in September. That is the price per ton. The cost of coal also at the Citizens

Works in their storage was very materially increased due to the necessity and on my recommendation that the Citizens storage capacity should be filled up pending the possible strike of miners on September 1st, 1923. That amounts to a good deal of money, the cost of storing that additional coal. I think that those items account for it and the cost of storing that coal in September. It is reflected so far as the price goes—the price between January one year and January of another, and it is also re-
[fol. 1142] flected in the coal pile itself, because the average price of the coal stored had increased due to the additional cost for storing. In September of 1923, the coal companies increased their cost per ton on broken coal from twenty five to thirty-five cents a ton. There was another change as shown by the coal contracts in April. I told you that the cost of storing coal increased the cost of all coal stored at the Citizens Works, and the cost of storing that coal from memory, is somewhere around a dollar a ton. It cost so much to store the coal at the Citizens because it had to be transported from the place where the coal was unloaded to the place where we stored the coal at the Citizens Works. We had to carry the coal pile up to a heighth of—thirty feet or more in order to get the storage we required. It was storage on our own property, and the cost of transporting this coal from the barges on to our storage pile was about a dollar a ton, which is pretty nearly a correct estimate. I do not recall the exact time when we started to store the coal. We transported it in motor trucks. We ran the trucks up an incline which went around the coal pile and then we dumped the coal from the trucks on the face of the pile, so that we gradually covered the entire area. It was a situation where we felt that we should make our coal storage of as big a capacity as could be comfortably stored on the property. When a boatload of coal comes in, we have used auto trucks for quite a period of time to throw it onto our storage pile. We are not using it today. We are keeping that storage and using coal as it comes in from the docks, so far as is possible. If we were going to store or create a reserve stock of coal at [fol. 1143] the Citizens, all the time, we would not utilize trucks. We would probably devise a mechanical means

of handling that coal. Our object was to obtain a storage which would be placed in the Citizens Works and be a storage which we could draw on from other plants. I think we have a reasonable stock of coal there now. That cost, the cost of storing this coal would be reflected in the February figures. In 1922 we stored coal as well. We began to store coal after the coal strike. It is much less expensive to truck it to our storage pile than it would have been if we have been short of coal and unable to make the gas. That is a very important consideration. I would say that the method which we used to convey the coal was the best and cheapest under the circumstances that could have been used. This coal was carried to an emergency storage was utilized as an emergency storage. We have it there yet as an emergency storage to a substantial extent and have been using coal that has been delivered since then and has been carried by his coal carrying apparatus, leaving so much of the storage as not been used, still as an emergency supply. The cost of the coal as stored is an average cost. It is the cost of the coal that has been received and put in storage. If it costs you more per ton for the coal, and if it costs you more to handle the coal, that is all reflected in the cost per ton for the coal at that particular works, irrespective of whether we are using it or not. The average figures is the cost of the coal as it is used. We call it all our storage of coal. In the storage which I suppose reference is made too, we have over 50,000 tons, kept there to be drawn upon whenever it is required. For instance, if a boat of coal does not arrive at our docks, we would draw [fol. 1144] from that storage. It has been our practice to do that for a very considerable number of years and each year we have not trucked the coal from our barge to our emergency storage pile. Whether we have done it in other years, depends upon the conditions under which we are operating. For instance, at a time of construction at the Citizens Works, we would undoubtedly use more coal from the storage where it had the large quantity of coal. Conditions when a plant is being reconstructed will of course be influenced by the way you can transport coal to that particular plant. There is frequently work going on so that you cannot bring coal in from a boat at the regular unload-

ing point. For instance, at the Citizens Works the coal handling machinery was installed there at the dock and in the vicinity of the dock there was a very extensive and costly installation, and during that time the Citizens Works could not take coal coming over the stringpiece at the point where this construction work was going on. They used coal from the general stock. We began to accumulate coal and put it in our storage or emergency pile. We carted that by trucks. Previous to September 1923, we did it in previous years, not each year, but whenever it was necessary. As to how often it has been necessary to take coal and transport it from our barge to our storage pile, emergency storage pile by trucks, I cannot explain by saying that it has been very often. It is a matter that depended upon the operation at the works. It varied, one time there would be a considerable amount stored, and at another time the storage would not be drawn from as much. It varied according to operating conditions. No matter what the operating conditions were, whenever we wanted to fill the [fol. 1145] storage pile, we trucked it. We have not made our coal contracts for the year 1924. We are now negotiating. I am now waiting the replies of the different companies. Sometimes the mine price is not received until the end of the month, as I have spoken of because and very frequently it might be received along about March 15th. We have sent out our invitations to bid but I haven't received any replies in some cases. In some cases we have received the response that they will notify us later between now and April 1st we expect to make our contracts for our coal requirements for the next year.

The gas was used by the company at the various works is mainly used for the purpose of keeping the pilots lit on the gas machines. That is matter that is necesary to be done so that there will be always be a light when the machine cap comes off. We use it at each one of the works. I haven't the figures showing the number of feet you use at the various works right here, but I can get them. In 1923 the gas used at the Citizens Works was 1,899,600 cubic feet; at the Fulton Works, 1,501,100 cubic feet; the Nassau Works 5,324,000; the Williamsburg Works 3,918,200; the Equity Works 1,671,600; at the Metropolitan

Works, 6,434,800; Citizens Works 3,982,500; Fulton Works 1,260,400; Nassau Works 5,545,200; Williamsburg Works 2,602,000; Equity Works, 1,787,200; Metropolitan Works 7,211,600; that amount of gas is used in connection with the running of the generators, very likely. In relation to the emergency coal pile that it could be there for use by the other plant if so required. It was not required in 1923, and I don't think that we required it in 1922. If we did require it in say, the Citizens or the Fulton plant, [fol. 1146] it would not necessitate carting it from our storage. It would mean that we would take the coal from the edge of the coal storage, which would be very near to the dock, and we would use an unloading belt or, rather, a loading belt to transfer that coal from the pile right over onto the boats, and we would move the boat to wherever the coal was needed. I don't think that has not been done during the year 1923 or 1922. We have a much larger storage at the Citizens plant than we have at any other plant.

Referring to our gas reserve capacity, as to how much over and above the daily average capacity of our plants in 1923, that is the requirements in 1923. The daily capacity of all works is 124,400,000. The maximum day average daily requirements in 1923 was 95,000,000. The minimum I haven't in my mind so nearly, but I should say it was in the 40's; we will say something over 40,000,000. Our average send out would be something over about 45,000,000 for the entire year. The average daily for the last year was 60,000,000 and the maximum day was 95,056,000. That is pretty near it. That was on Thursday, February 15th. The average requirement of 60; and our rated capacity is 127,200,000 I think, so we are able to make about 100 per cent more gas than our daily average requirement. If we had a day's send out of 95,000,000 we would not be able to make 50 per cent more than that for a day, for several days. If we put it that way, we have a capacity of about 33 per cent over and above our maximum demand.

[fol. 1147] Brooklyn, New York, March 17, 1924.

ROBERT W. BUSH

Redirect:

The correct figure of the daily total capacity of all the works is 124,400,000 cubic feet. The percentage of reserve over the maximum day during 1923 having ben 95,056,000 cubic feet send out and should be 25 per cent. It shows on my figures 22 to 23 per cent. Based on my experience the daily plant capacity should exceed the maximum day's sendout, by 25 per cent. The average demurrage for the year 1922, the demurrage per gross ton on broken coal was 2.37 cents per thousand. In 1923 the demurrage on broken coal was .0103 cents per ton of broken coal. In 1922 there was no demurrage on buckwheat. In 1923 the figure for buckwheat amounted to .0037 cents per thousand. The figure for the year 1923 on bituminous coal was .0601. Coke for 1922 was .0019, and for 1923 it was .0032. One large reason why the demurrage on broken coal was greater in 1922 than in 1923 was that, as I have already testified, we had 17,000 tons of broken coal which were afloat about April 1st. Some of those boats came in afterwards, but there were 17,000 tons which were on demurrage for a very considerable time. We did not clean [fol. 1148] them all up until a couple of months later, and that made an increased amount of demurrage. That is the coal we bought in anticipation of the strike. The reason why the demurrage on bituminous is larger than the demurrage on anthracite in both years is that in order to avoid a fire risk at our works, it is our custom to store only small quantities of bituminous coal. We do this by frequently sending a coal boat to unload a part of the coal at one works and the other part at another works. There had not been a year during my time with the company when construction work had not been going on at one or more plants. The Citizens, Fulton, Nassau, and Williamsburg plants were remodelled prior to the time that the Metropolitan was rebuilt. Those works were not closed during the period of construction.

[fol. 1149] ROBERT W. BUSH

Recross:

To get the 22 or 23 per cent reserve, I took the maximum capacity and called it 124,000,000; and the maximum day in December would be 95,000,000. I substracted that from the maximum capacity. We have had the reserve capacity, but whether we have had the total capacity of 124,400,000 at our works—that was so at the end of the year, it was so reported at the Public Service Commission. We have had a maximum day in January of about 96,000,000. Our company had a maximum capacity or reserve; I don't recall the exact figure, but 23 per cent is the figure we have been striving for all these years.

We have had a capacity in generators in some of the previous years that would approximate our present reserve in generators. In 1920 we had a maximum make, 84,182,000 cubic feet. The capacity of 1920 as of January, was 105,500,000. In January, 1920 it was 84,182,000. At the close of the year 1919; in other words on January 1st, 1920 the works capacity was 84,000,000. And we had a maximum day of 89,000,000. We didn't have anything like a reserve. I cannot tell how long prior to 1919 we were in a position where we had no reserve. In 1918 as of January 1st, 1919, the works capacity was 82,000,000. The maximum day in 1918 was 81,166,000. In 1917 the total capacity at the works was 74,100,000. In 1916 the capacity at the works, [fol. 1150] was the same, 74,100,000. In 1916 the maximum day was 59,267,000. In 1915 the maximum day was 52,557,000. In 1915 the maximum capacity was 70,100,000. The capacity for the year 1922 was 101,500,000. The maximum day for that year was 101,000,000. The maximum day for 1921 on the maximum make was 93,810,000. The send-out was 91,001,000 cubic feet for 1921. In 1922 the maximum capacity was 105,500,000 and the maximum send-out in 1922 was 86,564,000.

I have been striving to obtain the 25 per cent capacity that is required for some few years, particularly since 1915, at least and this is the first time that I have been able to more nearly secure that required reserve, although I have been working constantly on that proposition since 1915, or even prior to that.

There are periods in our history when the construction work going on is much larger than at other periods, that is, one year would be much larger than another year. During the years 1920, 1921, 1922 and 1923 there was an unusual amount of construction work going on. We made contracts in the latter part of 1920, to make extensive alterations in our plants particularly at the Citizens Works with the Bartlett-Hayward Company and then after the expiration of that contract and the installation of the various improvements that were made, pursuant to that we made several contracts, I cannot recall the contract; but there was a contract made about 1922 with the Bartlett-Hayward people.

The amount of construction work that has been going on at our plant since 1920 has been more extensive than for a few years prior to that. We had an increase in send-out for 1923 over 1922 of about 10 and a half per cent.

[fol. 1151] I cannot say what the per cent. has been for the increased demand of the subsidiaries for 1923 over 1922, but, as I told you before, the building in the territory where the subsidiaries are has increased very rapidly. There has been a great deal of new building. As to how long it will be before we will have to make other extensive alterations to our plant on account of the increased demand, it is difficult to forecast the future exactly, but we shall be considering as to what further changes we will have to make—we shall be considering that matter right along. We expect to put in a charging machine at the Citizens Works, for handling the coal. That is a part of the machinery. It would necessitate other apparatus. It would necessitate coal bins, and it would necessitate belts, that is, for transferring the coal, and it would necessitate coal screens and motors and all the apparatus incident to the installation of an entire coal handling apparatus.

I cannot say that we expect to put in any additional coal handling apparatus that will handle the coal from the stock pile to our generator house or to the bins in the generator house, but, I don't think that that will be done this year. I do not see any reason why it would be.

We have in mind to put in some new boilers at the Citizens Works. We may put in two or three boilers there, and if we do, they will be put in in line with the present three

stoker-fired boilers. There will be a continuation of that boiler house. The boiler house is large enough to accomodate the additional apparatus.

[fol. 1152] The boiler house will have to be extended and we expect to put in boilers with the stoker attachments, as I understand. We have not decided yet about putting in any boilers with stokers attached to them at any of the other works. Alterations to be made in the other works, outside of the charging machines to which you called my attention, that is a general proposition so far as the charging machines are concerned. That would apply to different works, all of them that have not got them.

I cannot give the program definitely as to what other improvements we contemplate making to the other plants aside from the Citizens. I can tell you that some of these things have been considered. In fact, all of them have been considered and decision has been deferred on some of them until a little later. I would like to have the coal-handling features and the coal storage features at the different works. That is an important item. That is a charging machine, and all apparatus incident to the charging machine. The charging machine itself is only a small part of the job. That is one of the great things, and we also have under way now, a tunnel across the Gowanus Canal; at the Citizens Works. That will be completed, we expect during this year and will, of course, mean a big job. In our future program of expansion we intend to expand any of them that, in our judgment, it is wise to expand. We have purchased a piece of land on the opposite side of the canal from the Citizens Works. We have not purchased any additional land adjoining the works on this side of the canal that I know of. As the rate of capacity goes we have not tripled the capacity of the Citizens Works in the last three years. [fol. 1153] It comes somewheres near it, it approximates to it. It is a little more than 27,000,000 if you base it on those figures.

When the Citizens Works is rounded out to this present capacity which it now has of 27,200,000, that will be the same size as the Metropolitan plant. Both of them will have a little less capacity than the Williamsburg plant. We intend to expand the Citizens Works to a far greater extent than we do our other works, there is more land area at the

Citizens Works than there is in other works, there is room there. I would rather not make my recommendations as to which plant I would recommend that the expensions be made in, if I were going to expand the plants, until I was sure of what is the thing to do. I have not made any such recommendations yet. If we have a greater send-out in the year 1924 than we did have in 1923 we will not have any reserve capacity at all.

I have found it very difficult to estimate what the weather conditions are going to be from one year to another. Sometimes we hit it more closely and sometimes we have found considerable difference between our estimates and the actual conditions. That is unavoidable. We cannot control the weather.

As to the addition of some consumers having something to do about our increased demand, of course, that depends upon the question of the increased demands for gas made by the consumers. I know the extent to which building has been going on in the territory of our subsidiaries as well as in our own territory. The number of meters that have been installed are growing very rapidly in the subsidiary [fol. 1154] companies. So far as my observation is concerned in going around and seeing the building, I should say it grew rapidly during 1923. So far as I know that rapid construction work or expansion or increase in number of consumers or number of inhabitants, still continues. I have not estimated the amount of make of gas necessary for our company in the year 1924 with any degree of final accuracy. I think it is a little early to make any prediction yet. I would have to forecast the future, and it is just as I have said, so far on the months passed months it is difficult to say just what the send-out will be for the entire year. But we have to be prepared, of course, to meet the send-out as made by the demands of the consumers. If it is a cold year, it will give us different figures from the figures that a warm year would give. I think an average consumption per meter runs over a period of a few years. I don't have anything to do with the meters, but I know that is a fairly constant figure. I could not estimate, from last year and from the program of building which is now going on throughout our territory, also the territory furnished by the subsidiaries, about how many additional meters would

be installed throughout the year. I only have a round estimate which I make based upon the send-out for the previous year, and I take into consideration the figures affecting that send-out for the previous year, and then I estimate on that. I have not any figures on the number of meters to be installed in 1924, or any date on that. I do not have those figures showing the number of installations of meters in the year 1923. I presume I could get them, but they are not under my jurisdiction. Mr. Paine, might give them to [fol. 1155] me, but they are not figures that I deal with. I would not hesitate to ask him anything. * * *

[fol. 1156] Somewhere in my examination I stated that the economies, projected economies, which I had installed had not yet come into operation by the first of April or thereabouts. I think I said during this month of March I would probably get them all going so that I would feel the effect of these new installations. I don't remember the exact day, or I mean the exact month. But I think I did say to the effect that we expected to find out more about what it would be.

I said that by the 1st of April these installations would be in 100 per cent. operation, in all probability. That had reference to the stoker-fired boilers. By the 1st of April I anticipated they would be in 100 per cent operation; that is still my expectation so far as the capacity to operate is concerned. And after that by absolute demonstration we expect to know the extent to which these new installations operate to economize our expense account. I will do my best by the first of May to have some comparative figures on that subject. It is difficult to give a definite date. For instance, I could not say that May 1st for a surety I could give that. I should think that in order to get all the figures that I might have to take a little longer than to the middle of May. This is a matter which has to be carried on for months to get a real average figure on which to place reliance.

[fol. 1157] The only apparatus that I have in mind is the stoker-fired boiler installation, at the Citizens Works. I do not think now of any other apparatus which has come into operation recently or will come into operation in the near future at any other plant. With the exception of the possibility of these stokers affecting our operating costs I see

no reason why the operating costs in 1924 should be less than 1923.

Recross:

I have not installed waste heat boilers at the Citizens Works which have just gone into operation. The waste heat boilers have been in operation for some time. The stoker-fired boilers are now going into operation. The two waste heat boilers at the Citizens Works went into operation in 1920. The last waste heat boiler went in last year at the Citizens Works. We installed one boiler in 1923, and two previous to that time. The last one was put in operation in 1923, the latter half of the year and the other two waste heat boilers have been in operation throughout the year. The original boiler was installed at the Metropolitan Works a number of years ago and since that time there have been other waste heat boilers built at the Metropolitan Works. They were built in 1923. They were not in operation in 1923, nor, are they in operation yet. They are waiting for connections which did not arrive. When we put them in operation I won't say we did not expect any decreased cost would arise from them. When I said I saw no reason why the cost in 1924 would be less on account of those improvements, I had in mind the general situation, and was speaking generally, the installation at the Metropolitan. I hope it may show a possible decrease [fol. 1158] in cost, that is what I am looking for. I cannot say whether the decrease in cost, whatever it was, due to wast- heat boiler operation at the Metropolitan Works would not be counter-balanced by some other place where there might be an increase in cost. I cannot tell you that now. But, there are other factors which have got to be considered besides that we are installing at some of the plants more modern appliances. There are other factors which make for an increase in cost. One factor is in the case of coal. I cannot say yet whether coal is going to cost more, because I haven't got my prices but I know that the handling of the boats will cost more, simply because I have received information to that effect; that they have increased their charges for wharfage, that is one thing. I am just citing that as an instance, not as being the only thing, but that is one thing. I said 5.7 cents per gallon for oil in

1923 based on the contract. That was for the year. Now the new contract for oil is 4.8 cents based on the 4.8 price and none of that oil reached our plants until February. The earliest period when any of our plants began to operate by using that oil was in February, and the latest plant began to use it in April.

I expect a decreased operating expenses will result by reason of the decrease in the cost of oil, provided that we use the same amount of oil per thousand and there was a decrease in the price per gallon of the oil, I should say there would be some saving there. We are not going to use any more of it just simply because it is cheaper, unless we are ordered to use more by some regulatory body when the candle power statute was in effect.

[fol. 1159] We did use enough to make 22 candles whenever we could get the oil. That last explains the rise of candle power and the figures I disclosed on cross examination—the ability to get oil.

[fol. 1160] I am the auditor of the plaintiff company and its so-called subsidiary companies. I have been with the plaintiff since 1895. From 1895 to 1915 I was clerk and assistant to the former auditor. From 1916 to 1920 I was assistant auditor and, from 1920 to the present time, I have been auditor.

The former auditor was Mr. Gilmer, who died in July, 1920.

In the subsidiary companies I have held the same positions as time went along; that is, my connection with the subsidiaries paralleled my connection with the Brooklyn Union, and I performed the same duties. The duties of my present position are, supervising the accounts of the Brooklyn Union Company and the subsidiaries. The accounts are kept under my direct supervision. I work with these books, that is, they are under my eye as well as my supervision, constantly. Prior to becoming auditor, I made entries personally. The ledgers, journals, cash books are the general books of account of the plaintiff.

Uniform System of Accounts for gas corporations as prescribed by the Public Service Commission, being final order in case No. 578, offered in evidence, no objection. (Received and marked Plaintiff's Exhibit No. 244.)

A certified copy of the Order of the Public Service Commission dated December 19th, 1923, in case No. 746, entitled "In the Matter of establishing a Uniform System of Accounts for Gas Companies," is offered in evidence. Objection made. Received in evidence and marked Plaintiffs' Exhibit 245.

Commencing January 1st, 1924 in accordance with this [fol. 1161] New Uniform System of Accounts, I have made some changes in my books for 1924 as compared to prior years.

I received in my office the uniform system of accounts marked Plaintiff's Exhibit 244, around the early part of December, 1908. After its receipt an entire new set of ledgers was opened up, and new forms were devised and printed in order to have the necessary information reported to our accounting department of which I am chief auditor, to comply with the requirements in the new uniform system. That also applies to the operating accounts. I drew all of the forms to meet the requirements of the new system. I was familiar at the time, and concerned with the opening of these new accounts. The major title of the accounts opened at that time, was "Fixed Capital subsequent to January 1st, 1909."

When this system came out, prior to that time we had certain capital accounts. In accordance with this system we divided those accounts in two classes, one class we called, "Fixed capital December 31, 1908." and the other class, "Fixed capital subsequent to January 1st, 1909." And the first class, so far as additions were concerned, stayed as it was at the time of its opening; in other words, it represented our fixed capital prior to the change in the system of accounting, and in those accounts there appear subsequent to that date only with drawals. The second class of accounts contain the subsequent history of the company with reference to capital. Our company makes annual reports to the Public Service Commission.

[fol. 1162] These annual reports are made up under my direct supervision. The form is prescribed by the Public Service Commission. The data that we put into the annual reports we get from the records and books on file in my office. I get reports from the various department heads for that purpose about the time I am making up the re-

ports. These reports contain both capital and operating. The source of my information is the same as to capital and operating.

We receive payrolls and payroll charge sheets showing the distribution of the labor from each department, signed by the head of each department. We get material and supply reports which represent material taken from stock by each department, showing the accounts that are to be charged, and those reports are signed by the head of each department. We get monthly sales sheets from each of the commercial offices, and the subsidiary companies, signed by the managers of each of those departments. We get engineer's monthly reports from the Engineering Department, recording the materials used in manufacture. We get reports from the holder distribution department, reporting the material used in the holder distribution department. We get reports from the street department recording the transactions in the street department, signed by the superintendents. We also get various subsidiary reports necessary in compiling information for the uniform system. I think that covers the major reports that we receive. All contracts are on file in my office for everything that is contracted for. All bills for materials purchased and requisitions for the purchase of material are on file in my depart-
[fol. 1163] ment. With reference to the labor personnel and the rates of pay, I have the original card notifying me that such and such a man has been appointed. That card shows the man's name, his address, the rating of the position he is to hold, the wages per week that he is to receive, and the payrolls each week on which these names appear. The monthly branch reports from each branch showing the transactions of meters. I have produced the ledgers containing the capital accounts of the company from 1895 to date. The books with the capital accounts marked for identification at this point are as follows:

Ledger No. 1 marked Plaintiff's Exhibit 246 for Identification.

Ledger No. 2 marked Plaintiff's Exhibit 247 for Identification.

Ledger No. 3 marked Plaintiff's Exhibit 248 for Identification.

Ledger No. 4 marked Plaintiff's Exhibit 249 for Identification.

Ledger No. 5 marked Plaintiff's Exhibit 250 for Identification.

Ledger No. 6 marked Plaintiff's Exhibit 251 for Identification.

Ledger No. 7A marked Plaintiff's Exhibit 252 for Identification.

Ledger No. 7B marked Plaintiff's Exhibit 253 for Identification.

Ledger No. 8 marked Plaintiff's Exhibit No. 254 for Identification.

In other words, Exhibits 246 for Identification to 254, inclusive for Identification contains the capital accounts of the company from 1895 to and including 1923.

Exhibits 246 and 247 for Identification contain also the operating accounts. Capital accounts in the fore part of the book. In the back part of the book there are some [fol. 1164] revenue accounts. Mr. Gilmer's, Mr. Buckley's and Mr. Bennett's handwriting appears in these exhibits for identification.

Exhibit 246 is entirely in Mr. Gilmer's handwriting. In Exhibit 247 we find Mr. Gilmer's and Mr. Buckley's. These books have been kept in the accounting department, 176 Remsen street. That is, they have been continually in our office.

Since 1895, up until the present time, I have had almost everything to do in connection with the journal entries that enter into these books both as to making the forms, in the first place, that supply the information, and instructing the bookkeepers in how to make the entries when they receive the information, and in numerous cases making the entries myself; but always entirely under my direct supervision. When I speak of the journals, I always connect with the whole job, because they are so interlocked.

Up to say, within ten years, I made the entries in the cash books, entered the cash reports, struck my balances, and at that time worked right in the assistant treasurer's office as well as in the account department. During the last ten years they have been kept in the assistant treasurer's office with the exception of the sub-companies' cash books, and they have always been kept in the Accounting De-

partment up until, I will say two or three years ago, and then they were transferred over to the assistant treasurer's office and then his clerk keeps them now.

I drew up the cash reports, in the first place, on which the cash should be reported and checked those same entries when they came back into my office, as to their accuracy, [fol. 1165] taking off my own analysis of the cash from the original entries in order to check the accuracy of the entries. Various clerks in the assistant treasurer's office made the entries in the cash book under my direction. With the exception that I have just stated during the last two or three years. Mr. Gilmer wrote the entries in the ledger from 1895. Mr. Gilmer was my senior and when Mr. Gilmer died in 1923 I began to make the entries myself. Mr. Gilmer and I worked side by side for twenty-five years. It was a joint operation in other words; he doing the writing and I doing the calling off, that is posting in the ledger from the journals and the cash books. I calling off from the journals or the cash books and he, in turn, making the entries as I called them off. The two of us checked them back. During all this period the same character of reports have been made from other departments. The form has been changed to meet the current requirements but the same character of reports. I was familiar during the period with the reports which were coming in. We have, in the first place, reports from the Engineering Department and reports from the Construction Department showing that certain materials has been expended in capital accounts. We also have payroll charge sheets which record the labor expended in addition to capital accounts. We have various vouchers of material purchased that is charged direct to the capital accounts. We will have reports from the Engineering Department and the Construction Department recording withdrawals from the capital accounts. These are journalized and posted into the ledgers.

[fol. 1166] We charge the capital accounts with labor and material expended and additions to capital accounts and credit them with the withdrawals from capital accounts and labor incident to the withdrawals. We do not make any distinction between additions and betterments. It is an addition to capital accounts. There have been no additions to the accounts entitled "Fixed Capital, December 31,

1908," only withdrawals. Property is added to the capital accounts at the cost as reported on the bills or the material and supplies reports or the labor charge sheets. The withdrawals are taken out at the original cost when known and estimated when not known.

Our general books of accounts and underlying data have been examined by representatives of the Public Service Commission and of the Attorney General. The Public Service Commission representatives have been almost constantly on the books for a good many years back, but continuously in the office since last April, 1923. The number of men there at that time, averaged, I think the greatest number was five and then they went down to two. I could not ask them just what they were doing, since April, but I could see they were making a complete survey of the capital charges. I could tell that from the questions they would ask.

Back in 1919, in connection with the former case, there was an examination made by accountants, representing the Public Service Commission.

The Public Service Commission men have not been in the [fol. 1167] office since last December. I think it was just either before or after the holidays. If I said there have been representatives of the Public Service Commission there steadily since 1919 or steadily, I would not want to mean every day, but it has been two or three days every week, maybe one day a week; then they would stay away a few days and then come back; evidently on different leads, I don't know. Representatives of the Attorney General have been there; there have been from four up to as high as seven representatives of the Attorney General's office in the building at one time, I think, since September, of 1923. They would come to me and ask all of their questions and they asked for various records and received whatever they asked for.

The Public Service Commission have had all of the books and I assume that they have checked all of our operating expenses completely. Of course, I cannot prove that. They had access to all of them. They asked me questions all the time, both as to capital and operating account.

Plaintiff's Exhibit No. 255 for Identification is a statement made by me, in the office, and it represents the balance

of the capital accounts at the close of each year, from 1895 to 1923, inclusive. I have checked it and am prepared to testify that it is correct. It is prepared from Plaintiff's Exhibits Nos. 246 for identification to 254 for identification.

Plaintiff's Exhibit No. 256 for identification is a ledger recording the operating accounts of the Brooklyn Union Gas Company for 1922 and 1923 and is produced here by [fol. 1168] me from my office. That book is in my office, under my supervision. The source of information for the entries in it as to expense and revenue is: payroll charge sheets, material and supply reports, engineer's monthly reports and holder distribution reports, the same set of reports that we get our information from for the capital accounts.

Plaintiff's Exhibit No. 257 for identification, consisting of four sheets, was prepared under my supervision. The section headed revenues and the column headed cubic feet is taken from the sales record on file in my office. The column headed amount is taken from the ledgers. The column headed cost per M. based on sales is a computation. The section headed expenses represents the totals or the captions of detail which follows on the subsequent sheets. In other words, the subsequent sheets to the first gives the details of the items shown on the first sheet under the heading expenses.

On Plaintiff's Exhibit 257 for identification the column headed cubic feet does not appear in the ledgers for 1922 and 1923, at all. The column headed "Amount" appears in the back part of the capital ledgers, marked for identification. The figures in the column headed "Cubic Feet" come from a record of make, sendout and sales book. The figures in the second column headed "Amount" are found in the back part of the capital ledger, Plaintiff's Exhibit 254. Turning over to the second page in the first line "operating expenses" is not the title of an account and "Production expenses" is not the title of an account. Those are, however, primary accounts, divisions of accounts [fol. 1169] contained in the uniform system.

The following are operating accounts: Generator fuel coal is an account. Generator fuel coke, Boiler fuel coal,

boiler fuel coke, Gas oil. Miscellaneous works expense, gas storage, boiler fuel tar, tar produced, drip oil sold, Work superintendence boiler house, generator house, purifier house, miscellaneous labor at works, gas storage, repairs, works and station structures, furnaces, boilers and accessories, steam engines, miscellaneous power plant equipment, water gas sets and accessories, purification apparatus, holders, miscellaneous equipment, and work tools. Shavings and oxide are operating accounts under the title "Purification supplies."

Production expenses less production adjustment are a credit account. I might say that production adjustments are an operating account as well. That is, there is an account with that title, "Gas made for associate companies at works," cost is the title of an account. "Transmission and distribution expenses" is the caption of the operating account which follow down to and including repairs of distribution tools.

Street Lamp repairs, Commercial administration and the accounts that follow, Promotion office expense and the accounts which follow promotion office expense, are operating accounts. Advertising, sundries and canvassing-soliciting gas are operating accounts. The accounts under the caption General miscellaneous expenses are all operating account. The detail at the bottom of the sheet of taxes is simply a memorandum which explains itself. It is a separation made by me, just to show what the taxes were [fol. 1170] made up of. Going back to the second sheet again and the following sheet, these titles disclose the nature of the material and labor which enter into each of them. The column headed "Quantity" appears in the stock accounts, which is a part of Plaintiff's Exhibit No. 254, a part of the capital ledger containing the material and supplies accounts, which these quantities are taken from. The column headed "Average Price" is a computation. The column headed "Amount" appears in the operating ledgers—Plaintiff's Exhibit No. 256 for Identification.

The column headed "Cost per M" based on make, is a computation. The cubic feet is taken from the sales sheets of the subsidiary companies. I am referring to the figure in brackets opposite made for associate companies at works

cost. And, under that, there is another figure of gas made in cubic feet taken from the gas make and send-out sales book. Turning over to the third page, the figures shown under amount are obtained from the operating ledgers which is Plaintiff's Exhibit 256 for Identification and the second column headed costs per M based on sales is a computation. In other words, it is a computation of the figures shown in the first column, divided by the sales for the year 1922. That applies also to the last page, throughout this exhibit my information on make, send-out and sales is taken from the make, send-out and sales books, so-called in our office.

Plaintiff's Exhibit No. 257 for Identification sets forth Revenues and Expenses of the Plaintiff for the year ended December 31, 1922, according to the books of account in my office.

[fol. 1171] Plaintiff's Exhibit No. 258 for Identification, a schedule similarly entitled, "The Brooklyn Union Gas Company, operating results Brooklyn Territory, year ended December 31, 1923," was prepared in my office under my supervision, and checked by me. It was prepared from the same sources as Plaintiff's Exhibit No. 257 for Identification.

If I were asked with reference to Plaintiff's Exhibit 258 for Identification, the same questions asked me with reference to Plaintiff's Exhibit 257 for Identification, I would make the same answers. In other words, Plaintiff's Exhibit No. 258 for Identification shows the revenues and expenses of the company for the year ended December 31, 1923, according to our books of account.

Plaintiff's Exhibit No. 259 for Identification, entitled, "The Brooklyn Union Gas Company, working capital," was prepared in my office, under my supervision, and checked by me. The figures shown are taken from accounts appearing in the capital ledgers, Plaintiff's Exhibit No. 254 for Identification. This purports to show the working capital at the end of each month for the year 1922 and for the year 1923 and at the top of each column appears the name of an account. This exhibit for identification showing the balances in the accounts entitled "Materials and Supplies, Cash, Accounts Receivable Excluding Associate Companies", the "excluding associate companies" is not

part of the account. With reference to that column we have added all of the accounts receivable together, excluding the balances owed by the associate companies. That is, we have deducted and left out amounts owing the [fol. 1172] Brooklyn Union Gas Company by the subsidiaries and then continuing the accounts, prepayments, special deposits and suspenses, as of the close of each month. The account, "Prepayments," means, prepaid taxes and prepaid insurance.

In Plaintiff's Exhibts 257 and 258 for Identification these are confined to operations in the territory of the Brooklyn Union Gas Company and exclude any operations of the subsidiary companies.

If I were asked the same queston with reference to Plaintiff's Exhibit 259 for Identification, my answer would be the same. In other words, this is an exclusively Brooklyn Union Sheet. The materials and supplies there are not used for the subsidiaries. Only in case we transfer some to them, but there are not materials and supplies here for the actual use of the subsidiaries. We purchase the materials and supplies for the subsidiaries as well as our own company; they are not shown in that item. We have coal and oil in there. We don't use any coal and oil for the subsidiaries, not in that way. The coal and oil is used in making the gas which we sell to the subsidiary companies.

The accounts receivable on Plaintiff's Exhibit 259 for Identification is the amount that is due the Brooklyn Union by the subsidiaries, that is excluded from that column. This sheet just represents the working capital for the Brooklyn Union Gas Company.

Plaintiff's Exhibit No. 260 for Identification, being a book entitled "Gas Make, Send-out and Sales, the Brooklyn Union Gas Company, No. 2," is produced by me from [fol. 1173] our office. The make is reported on the engineer's monthly reports. The send-out is reported on the engineer's monthly reports. The sales are reported on the monthly report of sales from each of the commercial offices of the Brooklyn Union Gas Company. The gas used by the company is reported from the several departments of the Brooklyn Union Gas Company. The unaccounted for gas is a computation. The send-out for period covered by bills rendered is taken from the daily send-out sheets from the holder department. I have covered it now.

Plaintiff's Exhibit No. 261 for Identification is a book entitled, "Monthly Sales Sheets, Brooklyn Union Gas Company, No. 3" and is produced from our office, and kept there. It contains the monthly report of sales from each of the commercial offices of the Brooklyn Union Gas Company, and the accounts which are kept in the General Office of the Brooklyn Union Gas Company for the years 1922 and 1923.

Plaintiff's Exhibit 262 for Identification, a book entitled Monthly Sales Sheets Subsidiary Companies is produced by me from our office and kept in my office. It contains the monthly report of the sales for each of the subsidiary companies for the years 1922 and 1923. It also shows the amount of gas used by the subsidiary companies.

Plaintiff's Exhibit 263 for Identification, a schedule consisting of two pages and headed Unaccounted for Gas of the Brooklyn Union Gas Company System, was prepared in my office and under my direction, and checked by me, and found to be correct. It was prepared from the sales [fol. 1174] sheets of the Brooklyn Union Gas Company and the subsidiary companies which have just been marked for Identification. The gas make, send-out and sales book, Plaintiff's Exhibit 260 for Identification was used for the totals. This is prepared from those three books, except that two of those books only contain the sales sheets for 1922 and 1923, and this exhibit goes back to 1910. I got the information with reference to the subsidiaries prior to 1922 from other similar records in our office. The first column is headed Sales to Private Consumers and to City of New York Sold by Brooklyn Union Gas Company and the Subsidiary Company. And opposite those I set forth the sales in various years according to the columns, and then below that I have set forth the amounts used by the Brooklyn Union and its subsidiaries. The figure of total of sold and used under which appears Gas Sales Adjustments, represents the quantity of gas sent out from the last indexed date in each year to the end of the year. That is, it represents the quantity of gas sent out from the last indexed date of the year to the end of the year. In other words we have a date in each month for the reading of meters called the average day; the sales are based on an average date of sales and at the end of the year there will

be a period between that date—assuming we will say that it is December 12th to the end of the year. We get the information by taking the sendout between the last averaged date and the end of the year, of 1910, for example, and the sendout from the last indexed date to the end of the year for 1909, and the difference between the two represents [fol. 1175] the gas sales adjustment. In other words, it rounds out the cubic feet to a calendar year basis and the figure shown in each one of those columns is the figure obtained by that subtraction; in some years it is a plus figure and in other years it is a minus figure. Where it is a minus figure I have indicated it in red. The increase in demand would not have any effect upon the quantity of gas sent out as far as this figuration is concerned. And finally by computation of one figure into another I arrive at the percentage of *of* unaccounted for gas.

Plaintiff's Exhibit 264 for identification was prepared in my office under my supervision. I checked the results and the calculations and they are correct. On the upper portion of the sheet I have divided it into three divisions; one headed "Operating Results of 1923 as per books, 587 B. t. u.'s Oil at 5.67 cents per gallon and 3.52 gallons per M." Under that heading I have set forth actual results in the year 1923, making a gas containing 587 British Thermal Unit*ed* with Oil at 5.67 cents per gallon delivered and the use of 3.52 gallons of oil per thousand cubic feet of gas made. In the second column I used the heading "To adjust 1923 Operating Results to Furnish 650 B. t. u.'s Oil at 5.67 per gallon and Gas Sold at $1.00 per Thousand and 4.50 gallons Per Thousand." Those figures purport to show the sales of gas at $1 and the operating results as testified to by Mr. Atwood. I have taken the actual amount of cubic feet sold according to our books and have made [fol. 1176] a mathematical calculation as to what it would have cost to make gas containing 650 British thermal units using 4½ gallons of oil per thousand and receiving a rate of $1 for the gas. In the third column I used the heading "To Adjust 1923 Operating Results, to Furnish 650 British Thermal Units, oil at 4.80 cents per gallon and gas sold at $1 per thousand and 4.50 gallons per thousand," in that column I have made the same calculation, except that I have put our oil at 4.80 instead of 5.67. At the bottom of

the page the captions at the left hand side are the titles of the major operating accounts. I got the figures of dollars and cents in the first column from the ledgers of the company. Those are actual figures and the figures in the second column are computations.

I divided the dollars and cents by the total sales, as shown at the top of the page in the column headed "Cubic Feet." The figure in the column headed "Amount" is a computation based on the testimony of Mr. Atwood. It represents the increase in production expenses furnishing the 650 B. t. u.'s and 4.50 gallons per thousand, that is what would have been the increased cost during the year 1923, if, during that year, we had been producing 650 B. t. u.'s with oil at 5.67 per gallon and using 4½ gallons to a thousand cubic feet of the gas.

The "Cost Per M" column is the dollars and cents divided by the total sales. The figures in the amount column headed "Increased to Adjust," is added to the amount opposite "Production Expenses," in the second column, arriving at the amount of money appearing in the adjusted [fol. 1177] cost column; that is, the addition of $8,354,000, and so forth to $836,000 and so forth. In the next column the computation cost per M. In the next column headed "Increased to Adjust Amount and Cost Per M" and the following column "Adjusted Cost," those are similar figures, for the year 1923, with oil at 4.80 instead of at 5.67. First my actual computation as a matter of experience for 1923; secondly what would have been our experience if in 1923 we had furnished the 650 B. t. u.'s with oil at 5.67 and using 4½ gallons of oil per thousand. I have simply made a mathematical calculation using quantities given me for use. 4.50 was based on Atwood's testimony.

Then this exhibit 264 for identification shows also what our revenues actually were in 1923 and shows what they would have been in 1923 under each of the two assumed changed conditions.

On Plaintiff's Exhibit 265 and 266 for identification the reports of gas used are taken from the files in my office and they are received once a month from each department. They represent the quantities of gas used by the company in each department for the years 1922 and 1923.

Plaintiff's Exhibit No. 267 for identification, book entitled "The Brooklyn Union Gas Co. Monthly Reports Meter Repair Department," is kept in my office. It contains the report from the Meter Repair Department in regard to 1922 and 1923, and shows the number of meters in that department at the end of the year and at the end of each month during the two years.

[fol. 1178] Plaintiff's Exhibit No. 268 for identification entitled "The Brooklyn Union Gas Co. Monthly Branch Reports 3," is kept in my office. It reports to me the meter transactions on the district of the Brooklyn Union Gas Company by each of the commercial offices. This book shows the number of meters in possession of the company and on the district at the end of each month except as are in the repair department at the time. These two exhibits, Plaintiff's Exhibit 267 and 268 for identification, together show the number and size of meters owned by the Brooklyn Union Gas Company, the character—that is, whether it is pre-payment or regular meters.

Plaintiff's Exhibit 269 for identification entitled, "Engineer's Monthly Reports, The Brooklyn Union Gas Co." is kept in my office. It contains the transactions in the manufacture of gas for two years, 1922 and 1923. The reports sent from the Engineering Department to the Accounting Department each month show the materials used in manufacture, signed by the Superindendents of the various works. They are used by me as a basis of making up the cost of manufacture of gas each month which ultimately finds its way into my operating ledger. These reports deal with material only used in the manufacture of gas.

Plaintiff's Exhibits Nos. 246 to 254 for identification, inclusive, that portion of Plaintiff's Exhibits 246 and 247 which contains the capital accounts—in those two years there are also some operating accounts—these being the [fol. 1179] capital ledgers of the company from 1895 to 1923 inclusive, offered in evidence.

Mr. Cummings: I object to them upon the ground they are incompetent, irrelevant, and immaterial and self-serving declarations.

Preliminary cross-examination:

On page 10 shown on Plaintiff's Exhibit No. 246 for identification under the designation Plants and Patents, "To the Brooklyn Gas Light Company," at Folio 4, with certain figures opposite; also for the Citizens Gas Light Company, the Fulton-Municipal Gas Light Company, the Metropolitan Gas Light Company, the Nassau Gas Light Company, the Peoples Gas Light Company and the Williamsburgh Gas Light Company; those figures were taken from balances of the companies comprising the Brooklyn Union Gas Company on November 4th, 1895. I got them from a journal in order to put them in here.

On page 59 of the same exhibit, under "Street Mains," there is a series of entries under date of November 4th, 1895, under the names of the different companies, which have become known as the vendor companies and opposite each one of those are figures, the source of these figures is the same journal of the Brooklyn Union Gas Company that I spoke of a moment ago. It is true that various entries are made in this ledger which are taken from that journal.

On Page 10, the entries on pages were 10 and 59 these were posted from the journal of the Brooklyn Union Gas Com-
[fol. 1180] pany. That is likewise true as to page 92, called "Franchises and Rights."

Mr. Cummings: I now object to the admission of that book, Plaintiff's Exhibit No. 246 for identification, upon the ground that it now appears that it is simply a copy from the journal which has not been offered in evidence.

The Master: What do you say to that, Colonel Dykman?

* * *

[fol. 1181] The Journal No. 1 of the Brooklyn Union Gas Company, offered in evidence (Marked Plaintiff's Exhibit No. 270 for identification.)

Plaintiff's Exhibit No. 270 for identification comes from my office and represents the entries from 1895 up to the end of that present book and is from the incorporation of this company, its first transaction. Journal No. 1 of the Brooklyn Union Gas Company contains entries to and including March 31st, 1897. There are contained in that

book entries which have been posted on page 10 and page 59 of the ledger, being Plaintiff's Exhibit No. 246 for identification.

Cross-examination:

The page of this journal which contains the entries posted on pages 10 and 59 of the ledger is Page 4, that is Mr. Staniford's handwriting. There were various records taken from the books of the vendor companies and copied into the journal, from the vendor's books.

Redirect examination:

I did see the entries in Plaintiff's Exhibit No. 270 for Identification and saw Mr. Staniford's writing. As he wrote he had before him balance sheets taken from the books of the vendor companies. Mr. Young, an accountant who was employed to take off these figures from the vendor companies, made the entries on what balance sheet. He was employed by the Brooklyn Union Gas Company. I saw Mr. Young in the office at 180 Remsen St., doing that work. I was a young man at the time, but I now know that he was taking them from the ledgers of the vendor companies. At that time I was a young man and didn't know much about a ledger or a balance sheet.
[fol. 1182] That was 29 years ago. I was about 18 years old. At that time I didn't know what he took his figures from, but subsequently learned. I saw the inside of those books that I saw Mr. Young using and I have not seen them in many years. I have not since seen the balance sheets which Mr. Young prepared and which Mr. Staniford used.

[fol. 1183] Brooklyn, New York, March 19, 1925.

ARTHUR F. STANIFORD

Direct:

In November, 1895, I was manager of the Metropolitan Branch of the Brooklyn Union Gas Company and also a general clerk in the office of the Brooklyn Union Company under Mr. Charles H. Stoddard, who was assistant treas-

urer of the company, in charge of the management of the company at that time, and he was formerly president for many years of the Metropolitan Gas Light Company. His duties in the Brooklyn Union Gas Company at that time, in 1895, consisted of the management of the whole company. Mr. Stoddard is not alive.

The entries in Plaintiff's Exhibit No. 270 are in my handwriting. I got the source of the figures and data that I wrote into that book from Mr. Simon H. Young. They were partially dictated and partially given to me on sheets. Mr. Young was employed by the Brooklyn Union Company to open up the Brooklyn Union books and inaugurate a system of accounts for the Brooklyn Union company. He was an employee of the Consolidated Gas Company of New York. He had charge of the books and accounts and was a very important man in other ways in the Consolidated Company. He was right hand man of Mr. Gawtry, who was president of the Consolidated Gas Company. Mr. Young is not alive. I cannot remember just who was present in the office while I was making the opening entries which are contained in this book from page 4 to and including page 24. I know Mr. Young was, and if I wrote [fol. 1184] them in the day time undoubtedly Mr. Stoddard was; if I wrote them at night the chances are Mr. Stoddard was not present, although he was familiar with the contents. I cannot remember those particular entries, whether I wrote them in the daytime or nighttime. I did a great deal of night work. Mr. Stoddard, one of the officers of the company was present in the office while Mr. Young was there. Mr. Stoddard was assistant treasurer of the Brooklyn Union Gas Company and formerly president of the Metropolitan Gas Light Company. I saw Mr. Stoddard and Mr. Young in conference many times. I cannot remember that I saw Mr. Young prepare all the sheets of paper which he gave me and from which I made the entries of November 4, 1895. I think some of them he prepared from data that was in the office. He never worked on any books in the office in connection with the entries. I saw him work on reports that had been made up by the various branches, and works, and the contracts with th-

vendor companies. I mean by branches, the commercial offices of the company. Mr. Young was there a year or more, in the office. Besides formulating these opening entries, he ruled up all of the books and blanks, ordered all of the books and blanks, made up the original journal entries, gave general instructions how each should be kept. In other words, he started the new system for us and he supervised, of course, the entries that I made in the books at that time. Pages 25, 26 and 27 in this exhibit 270 are blank because they were reserved for the purpose of making the original journal entries. That is, I mean we reserved the first 27 pages for that purpose. We made current entries for the month of November, the 30th entries were made before the original entries of November 4th were made. The opening entries were [fol. 1185] made, actually written in the books either July or August, 1896. Mr. Young was working on them in the meantime. I know that because I asked him continually why I did not have the original entries, I also asked Mr. Stoddard for them repeatedly, said that I would like to have the original entries so that I could put them in and complete the work. I was told by both those gentlemen that the original entries were not yet completed and that they were still working on the valuations of certain accounts, and that was the cause of the delay. I do not know, where Mr. Young got his valuation. I never saw him at work on ledgers or journals of the vendor companies and I did not see those books or such books at that time. Mr. Young had in his possession at the time the contracts with the vendor companies. I have seen him with Mr. Stoddard discussing them. I have seen both of them discussing them, with the papers before them, and this was during the time when opening entries were being formulated.

Exhibits 246 and 270 for Identification now marked Exhibits 246 and 270 in evidence.

[fol. 1186] ARTHUR F. STANIFORD

Cross:

I was Secretary and Treasurer of the Metropolitan Company and had experience in booking while I was with them, to a limited extent. I had worked on their books. I kept

their general books and so I had some knowledge of bookkeeping, when I went to the Brooklyn Union Gas Company in November 1895. I was a clerk in the general office. I was working under the instructions of Mr. Young and Mr. Stoddard. I don't remember the exact year I became auditor. I think it was about 1896 or 1897, but I have forgotten the exact year. I don't remember the time of the year I became auditor. Mr. Young and Mr. Stoddard and myself had to do with all the original work. There were two or three other clerks there, and I will try and remember their names but they had nothing to do with the opening of the books. They were working in our department. Mr. Payne was there, a boy doing junior clerk's work. I have a recollection that the first book we gave him to keep was a cash book recording the daily transactions from the branches, and the other books were along that line—and office duties. He had not had any experience in that. That was his first office job. We were teaching him to write in books. There was no bookkeeping about it. It was just copying reports into books. He knew nothing of bookkeeping. When I went there I did not have any knowledge that I was to become the auditor of the company. That knowledge was first brought home to me when I was appointed. I had no previous knowledge prior to that time. Mr. Young was there to open up this set of books. Mr. Stoddard was a bookkeeper, too. I was to keep the [fol. 1187] books after Mr. Young opened them up. Mr. Young opened them and I did the writing, and I was to continue with the work. I don't know what my thoughts were. I think I was told at the time, but I don't know what I thought at that time. However, that was a natural presumption. Mr. Young explained it more to me than he explained to Mr. Stoddard, because I was working directly under him. Mr. Stoddard was not present all the time, for we did a great deal of night work at that time and he was not there all the time. There was no general understanding between Mr. Stoddard and I that when Mr. Young withdrew from the work and completed his work, I was to carry that work on. I may have thought that, but I was never told that and I presume I naturally did think so, but that is actually what happened.

Regarding the account "Plants and Patents", Mr. Young didn't tell me anything about making withdrawals from the account when these entries were made. I knew nothing about withdrawals or anything of that kind. My job was to make the entries as he gave them to me in the book and I was to continue on with the system of bookkeeping that he had laid out for me. I don't remember just what he told me about the method of making withdrawals from the account—the credits to the different accounts on account of withdrawals. As we took up mains or services or condemned meters, we withdrew them from the capital account. I cannot recollect at what prices; that is thirty years ago. With reference to the system, I really cannot remember today at what prices they were withdrawn. That is 30 years ago, and I cannot remember that. I will have to have considerable time to tell the method which we used in making withdrawals from the plant and patents account. [fol. 1188] I will have to look through the whole journal to ascertain it, that is, withdrawals from plant account. I will have to examine each journal individually and will be at least an hour to an hour and a half in going through this book. As to whether we made a withdrawal in March, 1899, it is not in this journal at all, so I would not have found anything in this journal, nothing appears evidently, in this journal. We did not withdraw any plant during the life of this journal, if there are no entries appearing in the journal. If I can be assisted in referring to some entry, in the street main account as to our method of withdrawal, it will save considerable time.

Referring to the items showing withdrawals of street mains in the year 1896, as to how the figures there entered were arrived at, there is no unit price stated in the journal. It sometimes states so many feet of pipe taken up at so much money. I don't remember by what method or system I arrived at those figures in the entries.

At Page 208 of Journal No. 1 of Plaintiff's Exhibit No. 270 is: "For the cost of 150 of 3 inch main which was taken up in May by the Citizens sub-branch, $105". I don't remember the method I used in making that withdrawal of that credit. That is, how I arrived at the cost of the main. The entry shows the cost of 150 feet of main, but I don't remember just how it was arrived at. It is my writing, but

I know no more about it than is shown by the entry and I don't remember what procedure I adopted about any of the withdrawals. I don't remember my authority for making that entry nor can I state now from memory what my authority was for making any of these entries of withdrawals [fol. 1189] from capital account. So far as I can remember, there was some kind of a schedule that I did use, but I have forgotten the figures on it or just what it was. There was a regular schedule in operation by which data came to me and which I in due course entered as items of capital withdrawn. Of course we got reports from the various branches and works. There was a system—the monthly reports from the branches and works—by which there came to me the material from which I formulated the entries such as the one I am talking about. The taking up of mains would be reported by the respective branches, showing the number of feet and the size of the main to which some unit price was applied. I have foregotten the unit prices, but there was a schedule at that time. I don't know whether it was made up by Mr. Young or myself. Mr. Young knew a good deal about this business, more than I did when they were opened. There is nothing here that shows the cost. I mean there was a schedule furnished to me, containing these unit costs or unit items, and that it was a part of my duty, under instructions, to formulate entries of this character when they came through for that purpose, applying the unit costs which were supplied to me. I did not make up the schedule of unit costs and I don't remember who made up the schedule. There is nothing on the books to show the unit cost of each size of main. I do not know anything about those unit costs. I think very likely Mr. Young did know something about the cost of installing them. He was a man of very wide knowledge. He was a very brilliant man and he knew the business for a life time. He had been in the business for a number of years and he must have had all kinds of data. I don't know whether he made up the schedule of unit cost. He may have, or he may not. Of [fol. 1190] course, that schedule was made up and showed me the method of wtihdrawing and not only the street mains, but the services and plants and patents and franchises and rights. We have never withdrawn any rights. We had an acount called franchises and rights, which has

never been touched. We had no schedule for withdrawing any of that. We had no method for withdrawing from that account "Franchises and Rights". We didn't have a way of withdrawing from the account because we didn't think anything about the rights of the franchises expiring some time. I never had such a schedule. I do not know what it means any more than the name "Franchises and Rights." As to that particular account, I would never think much about any withdrawals from the account; I never heard the question brought up before on that account. Mr. Young explained to me very thoroughly the system, so that I could carry his system on and make proper debits and credits to the various accounts, and that was the reason he stayed there—to instruct me in this work. He never said anything about the account "Franchises and Rights", so I did not know. I could not tell but what during the time that I was auditor there might have arisen some credit to that account because I don't know whether there has been anything. I do not know what rights are represented. I do not know whether the rights expired during my time or whether they ever existed. I know generally what "franchises" means. I could not answer what the franchise meant that was in our books so that I knew how to handle it. I did not know what that account meant. I do not know anything about the franchise represented there ever existed or not except what appears on the ledger. That is all I know about it and I do not know what it means. Of course, [fol. 1191] not knowing what it meant, I could not make any charges or withdrawals to it, and I could not do a thing with the account.

Take our account "Plant and Patents," as to what was represented by patents, Mr. Young never told me anything about it. Going back to the franchises, I could not answer whether these journal entries were supported by any inventories—these original initial journal entries. I do not know if there was an inventory of franchises which gave the detail of this entry just spoken about, or an inventory which might have been found in the archives of the corporation, in its safe or elsewhere. I never saw one and with reference to the journal entries involving patents there was no schedule or inventory of the patent right which supported this journal entry, not to my knowl-

edge. I never saw any such thing. I took the account "Plant and Patents" as it was stated, just plant and patents. I never knew what patents were covered by that and do not know whether they had any patents or whether they withdrew any. I considered the word "plant" meant the works of the company, the manufacturing plant the holders, the holder station and so forth. I cannot remember whether Mr. Young told me in so many words. I cannot remember word for word what he told me. I used my own judgment, I suppose, in many of these things. I think in the course of time, Mr. Young told me many things. He was not there as an instructor. I did the work and gradually picked it up, and as I wanted information, I asked for it, and naturally absorbed a great deal. He watched me when I made these entries. I could not say that he knew I was going to carry forward his system of bookkeeping, which he himself had inaugurated. I do not know what his ideas were. I did carry them out. [fol. 1192] I do not know whether he knew that he was not going to stay with the company. I cannot say that he knew he would have to explain it to somebody, but he explained all of it to me. I presume he explained the composition of every account which was in our books to me, so that I could handle them, except those that I understood without asking for information, he not feeling the necessity for imparting it. I have no recollection that he ever explained to me what the account Franchises and Right" —. I never knew what it meant, and I never knew what patents meant. To the best of my recollection there was an account on the books called "Pierson Process." I have rather an indistinct recollection that we had such an account. That account was subsequently ruled off. I think there was a separate account opened for Pierson Process. I am not certain but it was not in our account "Plant and Patents." I didn't receive any instructions as to what part of that account represented patents and what part represented plant, simply the name of the account was "Plant and Patents." I did not think that patents was a plant. I may have thought there was a certain portion of that account which was set aside for patents and a certain amount of it set aside to represent plant, and I may not. I cannot remember what I thought in 1895,

but now I cannot tell which represents the plant, which represents the patents, which represents franchises, or which represents rights.

I said that Mr. Young made the opening entries and he was in frequent consulation with Mr. Stoddard during the time he was making them up. I think he probably was in consultation with me about them because there are some items there that were taken from memorandums and state-
[fol. 1193] ments that were made to the general office at that time by various companies. I think there are certain items there where we did probably talk over the matter together. I do not recollect any conversation he had with me. I am positive that he did not work on the vendor books in my presence, to my knowledge. My memory about seeing the vendor books is better than my knowledge of them because I know there were no books in the office of the Brooklyn Union Company when we were formed, because the books had not been ordered yet. We were working altogether on statements and loose pieces of paper. There were no books in the office at the time when I first went there to work. Mr. Young was ordering new books constantly every few weeks, or few days. The vendor companies' books were never in the office, to my knowledge. I never saw them there, and I never saw Mr. Young work on them, and I positively never worked on them myself. I have seen them at some time or other, some of the books. I do not know what books; not for some years. I know I did not see them at that time, and if Mr. Young had them, he never had them in my presence and most of his work was done with me in the Remsen Street office. I could not answer whether the books then were still in the office of the vendor companies because I have no interest in them, and no knowledge. I know where Mr. Young got some of his data of the unit cost or the data upon which these entries were made. I am quite sure he got it from reports that were made by the vendor companies on November 4, 1895, such as the cash on hand in the banks. To the best of my recollection the secretaries of the vendor companies made certain reports to Mr. Stoddard, as matters stood on November 4, 1895, comprising the cash on
[fol. 1194] hand, certain deposits with the City and State, the accrued bills for materials purchased up to November

4th, 1895, and matters of that kind. I do not know whether he got certain information from the vendor companies. All I know about is the cash and these other items that I have mentioned. I do not know how Mr. Young arrived at the figures which are shown in the Plants and Patents Account. He called them off to me and I wrote the figures in and I did not ask him how he got them or how I would withdraw from them. I do not remember whether I ever did or nor. I knew the method at that time, at what services and mains and meters and so forth were being withdrawn. We had no regular schedule for withdrawing from the Plant Account like we had for the other items. I do not remember just what method was used in 1895 in that respect. I know that we got the information from the place at which the apparatus was withdrawn and I was the auditor of the company for three years, from 1896 to 1899. I do not remember the dates exactly. I am quite sure that Mr. Young had before him the agreements between the vendor companies and the Brooklyn Union, but he did not have the vendor books in that office. I have seen him look at them and I have seen Mr. Stoddard look at them. Those are the exhibits that are in evidence. I do not remember whether he got the plant or patents account from the agreements in any way. I do not think I could make up the opening entries of the journal from the agreements, segregating them into the various accounts, as Mr. Young has done. There was no valuation made, as far as I know. At Folio 201 of this book, there is a credit item here of March 31st, 1899—$12,650.05.

[fol. 1195] It is my recollection that when I first went with the Brooklyn Union Company they had plants making oil gas largely, that is, I recollect in a rather hazy way something about it. I was not familiar at all with the plants of the company. I never had occasion to come in contact with them. Information regarding the various items of property at the plants which fell into disuse by reason of any reconstruction of the plants reached me either on the monthly reports or else there was a special letter written on some specific matter in the way of some report from the engineer. I have no present recollection as to what changes took place in the plants for the first seven years, but the only withdrawal from plant account that I am able to point to is this one item of $12,000; that applies to the People

Works and that was made while I was auditor. I don't know what was withdrawn at the time from the Peoples plant represented in the $12,000. That is, I cannot tell by looking at this posting in the ledger, but presumably the journal from which this item was posted would give me some further information. I have not looked at the books for seven years. This book only took us to 1900. The debit side does go to December 31, 1902; the credit side stops at 1900. This ledger was kept under my supervision when I was auditor for the three years, 1896 to 1899, and it shows the accounts in detail, and any entries that were made in the book were made by my authority and supervision.

I was a witness before the Stevens Committee, and I was cross-examined there by Mr. Hughes. I do not think I ever did know what was represented by the account Franchises [fol. 1196] and Rights. My testimony before the Joint Committee of the Senate and Assembly known as the Stevens Committee in 1905 as far as I can remember. Mr. Hughes asked me, the following questions and I made the following answers to them:

Q. "That was represented by the items Franchises and Rights. I find in the case of the Brooklyn Union Gas Light Company, $350,000."

A. "And you will find, Mr. Hughes, if you take the aggregate of those amounts and add it to that account for each company you will find the aggregate to be $3,050,000."

Q. "For franchises and rights."

A. "For the franchise; for the franchise giving us the right to make and sell gas, the franchise to do business."

Q. "The rights to be a gas company."

A. "The right to be a gas corporation."

Q. "Well, that does not mean the franchise in the streets."

A. "No, sir."

Q. "That is annexed to the value of the mains."

A. "Yes, sir, that is right."

In relation to the street main account these questions were asked me and I made the following answers, all of which are correct to the best of my knowledge and belief:

Q. "Take the next item of street mains, $647,732.92. Was that the amount of the book value of the street mains on the books of the Brooklyn Gas Light Company."

[fol. 1197] A. "I think the mains stated on the account of the Brooklyn Gas Light Company was in excess of that account somewhat."

Q. "Something was taken off?"

A. "Something was added to the statement of the Brooklyn Union Gas Company. The Brooklyn Union shows more amounts for that item."

Q. "The mains had depreciated, had they not?"

A. "The value as stated on the Brooklyn Gas Light Company's books for mains was for the actual mains in the ground. It included no special franchise. In taking the mains over on the books of the Brooklyn Union Company we took the value of the mains plus the franchise value, as we considered it a right to have mains in the streets."

Q. "Well, you were a little ahead of the State in fixing a valuation for street franchise."

A. "We considered that we had a right of some value in having those mains in the streets."

Q. "And you proceeded to value them right in 1895, some years before the State passed the law for their assessment?"

A. "We so valued them in 1895."

Q. "Do, you remember what you added for that right of the Brooklyn Gas Light Company?"

A. "I do not."

Q. "Well, approximately?"

A. "Not taking each company, I don't."

Q. "Do you know the amount added for them all together?"

A. "I think between $4,000,000 and $5,000,000."

[fol. 1198] Q. "That was added to the street mains account?"

A. "Yes, sir."

Q. "That is distinct from these items that I find under the head of Franchise and Rights?"

A. "Absolutely."

The same applied to the following questions and answers regarding the plant and patent account:

Q. "So when you opened the books of the Brooklyn Union Gas Company, instead of writing off from the book value

of those old plants any amount for depreciation, you increased the book value."

A. "I want to say there has been amounts taken off from the old companies' books for depreciation, Mr. Hughes."

Q. "I understand, but when you came to open the new books."

A. "In most cases had a higher amount than the constituent companies' books, I think."

Q. "Nothing was written off then, but something was added."

A. "Yes, sir."

Q. "And the same was true in each of these?"

A. "Will you allow me to state here what it was right there, Mr. Hughes."

"Mr. Hughes: Certainly."

A. "There was no good will shown on the constituent companies' books. We thought it was eminently proper to add in the plant account a certain item for good will. They had never done so in the constituent companies' book. They had been in business there for twenty five, thirty or forty or more years establishing the business, and we added a [fol. 1199] certain amount to that plant account for good will."

Q. "Now, how much did you add to the plant account of the various companies for good will, that is, taking them in the aggregate."

A. "I could not say, Mr. Hughes, for I do not know what the amounts allot-ed for the plants themselves were in those original entries, and I did not calculate that myself and I have never seen"——

Q. "You knew something was?"

A. "Sir."

Q. "You knew something was added."

A. "I knew something was added for good will, yes, sir."

As far as I remember that testimony is correctly stated.

Mr. Hughes asked me the following questions and I made the following replies:

Q. "Are you able to tell me today how much was added to the plant account at the time of your organization from the book value of the plant as it stood on the books of the constituent companies taking them in the aggregate?"

A. "No, I am not."

Q. "Can you approximate it?"

A. "I stated yesterday that I thought the good will in that item would approximate in the neighborhood of $5,000,000. I think that was my testimony yesterday."

Q. "Yes. And can you state today any more definitely the amount to which the book value of the street mains was increased when your books were opened in 1895?"

[fol. 1200] A. "I think I stated yesterday in the neighborhood of four millions. That is as near as I can arrive at it."

Q. "So we have $5,000,000 added to the plant account and $4,000,000 added to the Street Mains account and then the item of $3,050,000 for franchises which were put upon your books at the time of the organization of your company?"

A. "Yes, sir."

Q. "Which did not appear in the books of the constituent companies or the books from which your properties were derived."

A. "Yes, sir."

Q. "The total of about $12,000,000."

A. "Approximately."

All that is as near correct as I can remember it. When I say "correct" I mean that is what I said. At some time or other I have seen some of the books of some of the companies, but I don't remember just what books or just what companies or just when it was that I saw them. I remember reading in my testimony that when I was being examined by Mr. Hughes, I stated that I could produce them. I must have had some of them at that time, but whether I had them all or not, I am not sure. I don't know whether I could have produced them all or not. Evidently, from reading the testimony, I must have had some of them at that time. I never was very much interested in the books, because I never had occasion to refer to them or to obtain any information from them or have any interest in them whatsoever. I couldn't tell you when I last saw the books of the vendor companies. I must have seen some of them [fol. 1201] about the time that I testified, in 1905. I haven't seen them since. I don't remember myself if I made a search for them. I don't think I have searched for them.

I don't know whether they are in the possession of the company or not. I am the vice-president and a director of the company. Mr. Hughes asked me in relation to the same question:

Q. "Is there any way of verifying it? Have you got the books of the constituent companies?"

and I answered:

A. "I can have them. I haven't them here."

I think there is no doubt I had some of the books of some of the companies at that time. I should say that, in reading the testimony since 1905. I have examined the books of the vendor companies in relation to the opening entries in the books. I think I referred to certain items in a casual manner, but I can take an oath that I never did two hours work on all the constituent books in all my life. That is true. Regarding the four or five million dollars for the Street Mains Account, and $5,000,000 for the Plant account for good will, that is because I could not give the exact figures. I haven't made a study of them. I haven't made any statement about it. I don't remember that I ever had an opportunity to testify before the Committee on Gas & Electricity. I looked at the books, that is all.

I was a witness before the Commission of Gas & Electricity for about two minutes, just long enough for me to put in there, in about six minutes, the exhibits after about six months work, and that was at the end of the case. We pro- [fol.1202] duced some statement, but I cannot tell whether this is the same statement or not. They say it is a beautiful looking statement, anyway. We produced a paper that had every appearance of being a copy of this "B. U. Exhibit 26." We produced in 1908 a statement made by the officers of the company, or by the company, to the Commissioner of Gas & Electricity.

(Statement marked Exhibit No. 30 for Identification and offered in evidence.)

Objected to, as irrelevant and immaterial to the issues in this case, what this witness or anybody else thought on October 31, 1905, before there was any candle power standard, before there was any rate, before there was anything

at the beginning of the world, so far as rate regulation was concerned.

The item under the caption "People Works" in the account called "Plant and Patents" amounting to $12,610.05, in Exhibit No. 246, page 10, was an amount received from material sold at the Peoples Works. My books do not show the nature of the material. I have no recolletcion about it. This credit entry represents the amount that was realized from that sale. It would appear that that was some part of the works that had been scrapped because it is credited to Plant and Patents Account. The item on August 31st, 1896, under Peoples Work $538, I should say was the same thing, money received for some part of the plants at the Peoples Works.

[fol. 1203] The items here under the caption "General Office" and over it is "Jamaica" amounting to $53,897.01 are charges made to Plant and Patents Account by transfer from Construction Account for that year. The Construction Account was closed each year. The construction work was under the heading of Jamaica because it was money expended for plant on the property of the Jamaica Gas Light Company which is leased by the Brooklyn Union Company. That is a debit. I cannot tell what the nature of that construction is. It is probably the holder, but I would not like to state that. A record was kept of the amount spent in certain construction work carried in construction during the year, and at the end of the year, transferred to Plant and Patents Account. The construction account, a capital account, was closed each year and the balance carried to Plant and Patents. The construction work ultimately gets into Plant and Patents anyway. The capital account was the same before that journal entry and posting as it was after. It does not change our capital, that is, we did not change the same total of our capital account at all. Such money at the time we spent it was charged to construction, but at the end of the year transferred to Plant and Patents. We built a holder about that time, and it would appear from that amount that it very likely was part of the holder cost. The reports made by our company to the State Tax Department of the State of New York are made up in the general office. I certify

to them and I swear that they are true, to the best of my knowledge and ability. On page 38 of the report for the [fol. 1204] year ended December 31, 1922, I set down there certain figures showing the cost to reproduce new the mains and services, excluding paving, that includes the mains and one-half of the services that are in the street and the item showing the services that are outside of the streets are shown thereon. The amount of $1,819,576 07 added to this amount of $1,819,576.08 gives the cost to reproduce new of the entire services, both within the street and without the street as of December 31st, 1922 and in separate schedule it shows on what basis that sum was made up. I also stated there the present value of those mains and services. I might also add that there was a statement in the company's reports which also showed how that was made up. In other words, the present value as reported to the State Tax Commission was the cost to reproduce new the same but a supplemental statement was filled with the report showing the basis as to how that value was arrived at. I also stated the tangible real property outside of the streets as $25,101,388 comprising land and plant apparatus and holders and buildings. Then the present of those items, I also gave of the tangible property—personal—such as tools and implements, meter connections and stable equipments, office furniture and fixtures, materials and supplies, and the cash and other intangible items. They were made up under my direction. That is a report for 1922 offered in evidence.

No Objection.

Marked Defendants Exhibit 28.

I have not filed the report for the year 1923 yet.

[fol. 1205] I do not remember the exact figure for the total of the issued Capital of all the vendor companies concerned with the taking over. I know that the capitalization of one of the companies stated in the book (shown witness) is wrong. In general way, the book refreshes my recollection or not, that is all. I can see there is an error on the face of it. I cannot tell the total capitalization of all the vendor companies at the time they were taken over by the plaintiff corporation in 1895, not definite figures.

[fol. 1206] THOMAS P. PAYNE

Direct:

The remaining ledgers of the company, containing the capital accounts, 247 to 269 for Identification inclusive offered in evidence.

Objection made to those that they are declarations in favor of their own interest, that is all overruled.

(Plaintiff's Exhibit 247 to 269 for Indentification marked in evidence over objection. Exceptions to defendants.

* * * * * * *

[fol. 1207] Brooklyn, New York, March 21, 1924.

THOMAS P. PAYNE

Direct:

I had no connection with the making up of a report of the Brooklyn Union Gas Company to the Commissioner of Gas and Electricity of the State of New York for the year ending June 30th, 1906, produced by counsel for the Public Service Commission. At the time it was made, I had to do with it only so far that I might have been engaged in calling off some figures or making tabulations for the record, it would have been in clerical capacity only. The figure on this page headed "Construction and Equipment," are in Mr. Staniford's handwriting.

I wrote the report of the Brooklyn Union Gas Company to the Public Service Commission for the first district of the State of New York for the half year ended December 31st, 1907, similarly produced. I would like to add there that I simply copied that report and did not make it up, but I know that the figures were taken from the ledgers of the company. And by that I mean the ledger in evidence for that year.

The annual report for the Brooklyn Union Gas Company to the Public Service Commission for the First District for the year 1908, also produced by counsel for the Public Service Commission, was copied by a Mr. Butler. I know the sources from the information as to capital shown on page 21 were taken. They were all taken from the ledgers

[fol. 1208] of the company. On page 21, the page containing the balance sheet, the capital items were taken from the capital ledger for that year, in evidence. And that is true of all the capital figures throughout this report. The figures at page 20 of the annual report of the Brooklyn Union Gas Company of the Public Service Commisison for the first District for the year ended December 31st, 1909 are balances taken from the ledger in evidence for that year of the Brooklyn Union Gas Company. That is Mr. Butler's handwriting. I worked on a great many of the schedules. My working copy would tell me just what connection I did have with it, but I was under Mr. Gilmer, and he had a lot to do with it. I know where the figures came from and I have since continued the making of these reports. There have been changes in the figures appearing in the reports, at the suggestion of the Public Service Commission. That has been the practice.

The report to the Public Service Commission for the half year ended December 31st, 1907; the report for the year 1908, and the report for the year 1909 offered in evidence.

Objected to them on the ground that they are incompetent, irrelevant and immaterial. Objection sustained.

Cross-examination:

I have been auditor of the company since 1920. From 1916 to 1920 I was assistant auditor. At that time Mr. [fol. 1209] Gilmer was auditor. I have been constantly in the auditing department since 1895, since I saw the vendor's books. * * *

[fol. 1210] I would call a betterment that physical change to an apparatus which makes it better and sometimes better looking. Whether I would show it as a betterment on my books depends on the circumstances. I would have to know the history of the betterment from start to finish before I could decide on how to call it. Assuming there was an engine used by the company and they brushed it up a little bit and made it better looking but did not increase its capacity, I most probably would charge that to repairs. But in that case where the betterment only applies to its personal appearance, I treat that as a repair. If a change

is made to an apparatus whereby its capacity is increased, it is a charge to additions, in other words it is a capital charge. If we had an engine or any other piece of apparatus and we reconstructed it and doubled its capacity, we would withdraw the apparatus in question absolutely—get it right off the books, and it would become a new apparatus and be put into the capital account. That is the practice of treating matters of that kind that has been done for many years back. The amount of repairs that were [fol. 1211] done at the Citizens Works in 1922 and 1923, those things were, as a matter of fact, charged to repairs on the books. It is in the ledger, but I haven't got the tabulation. It would be quite a lengthy process, because there were a number of accounts affected by repairs in the works, and I think, as a matter of fact, there were fourteen. The 1923 report would be rather inconvenient now because it is due to be filed tomorrow, and it is being used in order to prepare for filing. In fact, I haven't the right to hold it up. But for 1922 it is all right. I have got a copy of our 1923 report.

In 1923 the company expended for repairs to water gas sets and assessories at the Citizens Works $147,488.96. And in 1922 they spent $39,585.71. This makes an increase for 1923 over 1922 of $107,901.25. I haven't the work order in mind now. The repair order of 204 is noted in the account, but I could not give the total account now. The work repair order itself will show that. I could not say offhand what the work was under that work repair order. I have sent for it.

At the Nassau Works, the amount expended for repairs to water gas sets for the year was $56,761.57, and in 1922 it was $32,857.21. Work order No. 3637 very probably would [fol. 1212] account for the difference between the two figures. I have only knowledge as to work that was performed and shown by my repair work order No. 3637 as reported on the work order. I would have to refresh my recollection by looking at that. I get the information that the work done pursuant to those two work orders is an operating account, and expense. In the first place the letter of authority or a board authorization is made out, describing the character of the work to be done at a plant. I know in a general way, in advance, the work that is going to be

done there.. When the work orders are issued, they are split in different parts. In other words, there will be a master work order that takes in the entire job, and there will be supplementary work orders taking care of different parts of the job. On these work orders, the account will be marked. After reviewing the work to be done and getting in consultation with either the construction department or the engineering department, the account is decided on; that is; at the bottom of the request for work order, the construction department or the engineering department will mark to what account the item shall be charged. We make a survey of the work to be done. The grand determination or the last determination would be made by me. That is, if there is any question in mind as to whether an im- [fol. 1213] provement should be charged to capital, and in my judgment is should be a repair; then a consultation takes place and a decision is then made as to whether it shall be a repair charge or a capital charge. Decision is then made by me. The president or the board of directors would not be interested in the charging of accounts. That is left entirely to my judgment. I think the work orders will be sufficient. By referring to the account for repairs at works throughout the entire account, you can pick out from the books in detail an item for repairing the dock or the sewer at the Citizens works. The withdrawal of the dock would appear in the works and Stations Structures of the Citizens Works as a withdrawal, and my recollection is that it was not charged to repairs at the Citizens Works in connection with the sewer. That part of the repairs were made outside of the sewer which were directly chargeable to the works and so charged. There was no charge against the works for the collapse of the sewer. I can get an analysis of the charges very readily. The repairs at the works, as well as all of our repairs varied materially from year to year. The items which make them are based on the character of the work being done at the various plants. There are always charges against the repairs of water gas and accessories every year. As to the charges [fol. 1214] that are ordinarily normal charges and expenditures to a water gas set and those occur infrequently as shown on these reports, I could not be very definite. The character of the work being done at the various plants does

not tell whether they are extraordinary or normal. I know from my experience that repairs to the various repair accounts of the works are sent in, and if one year they are ahead of another year, there is generally a very good reason why that should be so, and the charges as they come through tell me those facts. I have the repairs at works over a period of two years in this ledger. I will check the totals. These are the following items as repairs at works for the period 1922 $623,215.16 and 1923 $850,398.

(Work order R-204 marked Exhibit No. 31 for Identification.)

I cannot say whether work order R-204 covers all the construction work or repair work that was going on in relation to the Williamson generator set at Citizens Works. There wouldn't be any other work orders with that number R-204. The expenditure on that order is the estimated figure of $56,000. It is an estimated expenditure. The data which shows the actual expenditures is in my office. That will be shown on an analysis of these work orders which record the charges as they come through.

[fol. 1215] (Work order 3637 marked Defendants' Exhibit No. 32 for Identification.)

There were alterations to the four Williamson generators Nos. 5, 6, 7, 8, by increasing the size of the hydrogen pipe, purge valve and stack, gas take-off, and *do* forth. I would have to get the analysis from my office to finish how much was expended for that work. I can not get it from this. This is a request for a work order, it does not show what was charged. Our office has not sent me the actual work orders. The information wanted is not shown on the papers that our office sent me. I would like to add that in asking the question, counsel should, before the words "Work Order," ask me for the charges against these work orders because there is a vast difference. That would be the complete data.

The expenditure in the item of $90,151.35 under the heading "Repairs to water gas sets and accessories" at the Citizens Works for the year 1923 was the replacing of the steel shell and lining of the generator portion of the four Williamson generators, and was charged to repairs to water

gas sets and accessories. With the idea of ascertaining whether that was a proper charge to repairs or whether some portion of it should be charged into fixed capital account, I first ascertained what they were doing in regard to this generator. We found that to refer to the steel shell [fol. 1216] and the lining, that they were simply taking out and putting back the same kind of a unit; were not adding to it or taking away from it anything; they were simply replacing. That was an indication to me that the repair charge was not corect. We charged into our capital account a portion of the expenditure by reason of the alteration of these generators, $116,253.67. The amount went into our fixed capital account. Then the total charge for work done on the generators was about $213,000. The total charge to repairs on that job was $97,665.97. I don't recall whether any other steel shells have been replaced; steel shells and linings have been replaced in the generators within the last five or six years. In my experience, with the knowledge that I get from reading these different descriptions, I would hardly call that an extraordinary repair, although that really is an engineering question. I could not recall that any change to the repair account for similar items within the last four or five years had been made preceding that.

I haven't got the amounts charged to capital on work order 3637, but I have got the amounts charged to repairs, which is the figure that you mentioned this morning, namely $13,789.03. The work done was alterations to the four Williamson generators Nos. 5, 6, 7, and 8, by increasing the size of the hydrogen pipe, purge valve and stack, gas [fol. 1217] take off for connections to connecting mains and wash-box and so forth. In making inquiries in regard to this work order, we found they had to re-locate oil and water lines, re-locate a gas line, make alterations to the generator charging floor and put in new crowns on four generators and new fire and ash doors on four generators, the total amount of which was $13,789.03 for these repairs. The amount that I gave in repairs did not increase the size of all the items making up the $13,000 figure. In both instance the generators were increased, that is, their capacity was increased. As a result of that work I made a distinction between that portion of the work which would cause it to

have increased capacity, as distinguished from the work that was ordinary repair work.

After the original request for the work order came through, namely, 3637, a supplemental report came through applying to the same number, which noted the fact that alterations to the four Williamson generators were going to be made for the increasing of the size of the hydrogen pipe and so forth. Right now I don't know how much was added to our fixed capital account on account of this. I know that something was added. I made an honest endeavor to separate those expenditures into fixed capital and into repairs. It was my ambition to have that portion charged to capital which rightfully belonged there. I looked up work order R-223 expended for re-locating steam, oil, and water lines [fol. 1218] of the Williamson generator house at the Nassau Works and concluded that the entire expenditure should be deemed repair. As to why it was necessary to re-locate those lines is an engineering question. I cannot answer that. Neither do I know whether it came about by reason of the increased capacity of the generators. I made no inquiries in regard to that. I would not have to on the strength of this work order. A work order tells you enough to properly allocate it in your judgment. Re-locate steam, oil and water lines in Williamson generator house—suppose the re-location was caused by the increase in the capacity of the generator, it would not necessarily follow that it would be anything else but a repair charge. If it became necessary to re-locate these lines by reason of the construction work, we would still consider it a repair.

In connection with the cave-in of the sewer at the Citizens Works there were charged to repairs $7,380.94. We made those charges to repairs on account of the removal of about 285 feet of bulkhead and an automatic railway engine house. That represents the cost of the removal. We have always carried the bulkhead as a part of our works and station structures. I assume there must have been repairs made to [fol. 1219] it in years gone by aside from this year. We would naturally make repairs to all of our property at stated intervals. We treated docks or bulkheads as part of our works and station structures at the other plants. That is according to the uniform system. We make no distinction between the Citizens Works and our other works

in that respect. The bulkhead is a part of the buildings. It lies adjacent to the land for the express purpose of keeping the land from slipping. When we purchase the land that is carried on our books at cost, at the purchase price, we had to separate the value of the *of the* land from the bulkhead and carry the land distinct and then attach the cost of the bulkhead to our works and station structures. I don't believe I have had that condition since I have had anything to do with accounts. I do not think we have bought any water front property. I believe we have recently purchased a parcel of land on the other side of the Canal at the Citizens Works. That property fronts on the canal. From my recollection I do not think it is bulkhead. I am not positive about that. The buildings are works and station structures. Carrying out my theory, that would have to be done. We would divorce the bulkhead from the land and charge it to works and station structures.

[fol. 1220] In so far as the Brooklyn Union Company and the subsidiary companies are concerned, the figures reach me, in order to arrive at the unaccounted for gas, through the medium of sales sheets of each of the commercial offices of the Brooklyn Union Company and the subsidiary companies' offices. I also receive from the engineering department the send-out figures daily. I take the quantity of gas that is sold by the Brooklyn Union Company, and the quantity of gas that is used by the Brooklyn Union Company, the quantity of gas that is sold by the subsidiary companies, and the quantity of gas used by the subsidiary companies, and arrive at the total. I deduct that total from the total amount of gas sent out. Now those sales figures represent the sales between average dates. For example it is impossible to read all of the meters of the entire system on the same date. therefore it has to be spread over the month, and an average date is computed on those readings, which we call the average date of sales. It might run from the 12th of the previous month to the 12th of the current month. The send-out between those two dates is the figure that the total amount of sales and used is deducted from. The remainder is unaccounted gas. It is the policy of the company to assign the same percentage of unaccounted for gas to the [fol. 1221] subsidiaries as they do in the Brooklyn Union Company. In other words, I arrive at the unaccounted for

gas of the entire system and that is applied equally to the Brooklyn Union Company and the subsidiaries. That policy has been pursued by the company. I think maybe it is three years now—I am not sure. Prior to that it was a flat per cent charged to the sub-companies. The unaccounted for gas in the territories of the subsidiaries was 8 per cent. I don't know whether it was estimated or not. I had nothing to do with the make-up. I took the sales of the subsidiary companies based on what they used and charged them 8 per cent unaccounted for. The answer represented the amount that the Brooklyn Union bore to each of the subs. It is a resolution of the board of directors. It is done pursuant to the board of directors. I have not the present resolution. I could not get any of the resolutions out in time. The present determination of the amount of unaccounted for gas in the territories of the subsidiaries is also pusuant to a resolution of the Board of Directors of the Brooklyn Union and the subsidiary companies. That is, the custom is for the Brooklyn Union to pass a resolution, and then the directors of the subsidiaries accept that as a basis of charge. The unaccounted for gas which is allocated to the subsidiaries is determined in pursuance of a resolution passed by the Board of Directors. I do not know the causes for unac- [fol. 1222] counted for *unaccounted for* gas and its variableness. I was not present at the Board of Directors' meeting when the last resolution was passed, and I had no part in that. The resolution was not framed upon my recommendation and I was not consulted with reference to the preparation of that resolution and the adoption of that system. My position is simply that of a ministerial employee in that regard. And a resolution came to me as a matter of authority and I am called upon to obey it.

I cannot give you the consumption per mile of the main in the territory of the Brooklyn Union for the two years of 1922 and 1923, and also in the territory of the subsidiaries. I have not either of the annual reports for 1922 or 1923. The data is available of the number of miles of main in the Brooklyn Union territory and each of the subsidiaries, and the quantity of gas used and sold in each of these districts. It is not the fact that the mileage of each subsidiary and in the Brooklyn Union proper are the same in each of the two years and for the entire portion of each year. I know the

mileage of mains at the end of each year so far as the company is concerned. Those figures can be readily obtained as of record. Namely, the mileage of the Brooklyn Union and the mileage of each subsidiary, the quantity of gas consumed by the Brooklyn Union and the quantity by each [fol. 1223] subsidiary, during each of the two years in question. I would have all of them in the Public Service Commission's reports, brought down here for the entire year. I could get my answer to this question from our report. By my testimony it appears that the defendants have in their entire possession now all the data necessary to make the calculations we were talking about for the year 1922, and they will have that data for the 1923 in a day or two, as soon as the report for the current year can be filed. The calculation, that is, the consumption per mile of main is in that report.

Regarding the gas used by the Brooklyn Union, the subsidiary companies are charged for the quantity of gas that they purchase at the works cost. In a very broad way we might say that they are charged—for a portion—no I will modify that—I will say that the subsidiary companies are not charged for any gas used at the works. The subsidiaries are charged for gas used by the Brooklyn Union Company at the holder stations. In the case of Newton and Flatbush Companies, they each have holders which are jointly used by them and by the Brooklyn Union Gas Company. A certain portion of the gas used in these holder stations is charged to each of those companies for that reason. In the case of the Richmond Hill, Jamaica and Woodhaven Com- [fol. 1224] panies, which have no holders there is no charge for gas. Because with these three companies which have no holders, there is no gas used for their use. They get their gas from the Brooklyn Union System. I don't know where it comes from. The subsidiaries have their own holders. The three companies, the Richmond Hill, the Woodhaven and Jamaica Companies, obtain their gas from the Brooklyn Union Company; but I cannot tell which holder it comes from. It is my opinion that it comes from some holder. There is no charge made to these three companies mentioned for gas at any holder. That portion of gas which these various works purchase is delivered to the subsidiary companies. The charge for gas purchased by the Newtown

and Flatbush Companies contains the quantity of gas used by them times the work cost, times the amount that they are charged with. In the case of the Richmond Hill, Jamaica and Woodhaven Companies, they are charged with the gas which they use themselves, plus the work cost. They do not pay for any portion of the gas used by the Brooklyn Union Company. In that item of works cost, there enters into that the cost of this gas which the Brooklyn Union Gas Company uses in order to make the gas which they sell to the subsidiaries. The gas at the several plants cost so much money to make. Up to that point it doesn't matter where the gas went. It cost that much money to make all of it. [fol. 1225] And a part of that cost is an item of gas consumed by the Brooklyn Union Company in the process of manufacturing the gas to send out. In the very process of manufacturing the gas, the Brooklyn Union Gas Company utilizes and consumes gas. The gas, having been manufactured goes out to our subsidiaries through the holders, and among them are these three subsidiaries that we have under discussion. That cost of manufacture does not include as one of the items gas consumed by the Brooklyn Union Company in the process of manufacturing it, as a part of the cost of manufacture. That is used in connection with gas used at all of the other departments in determining the unaccounted for gas at the end of the month.

For illumination, I think there is one burner that heats the hot water system. There is no cooking and there is one range in 180 Remsen Street which they use for cooking at certain hours of the day. There is no advertising but there is demonstrating. In our demonstration rooms and in the windows of the demonstration rooms there are gas jets burning to demonstrate the use of different kinds of light, and whenever necessity arises, they will light a range in the demonstration room, to show the character of the burner. That is all metered. Now at 176 Remsen Street we use some gas for illuminating the different offices in the building and also for the hot water system. There are no employees of the subsidiary companies in 176 Rem- [fol. 1226] sen Street. I mean employees working entirely for the subs. All the general officers of the Brooklyn Union Gas Company work as well for the subsidiaries. That is, Mr. Jourdan, Mr. Staniford, Mr. Atwood, and

Mr. Gatehouse and myself, all of my people, the people under my supervision all work for the subsidiary companies as well as for the Brooklyn Union Gas Company. None of the gas which is used at 176 Remsen Street is charged to the subsidiary companies. It is not charged to the subsidiaries. We use gas at all of the branches, warehouses, at 130 Atlantic Avenue, and at our fitter's school, also the Third Avenue Garage. The subsidiaries are not charged at all for any of the gas that is used by the Brooklyn Union Gas Company either in the manufacture of gas or in any of its buildings. That was true also in 1922, the subsidiaries were not charged.

I expended for work on consumer's premises in the year 1923 $174,520.15. In 1922 I expended $101,384.52, an increase of about $73,000 between the two years. Now, in 1923, included in my figure there is a charge for special inspections, amounting to $108,668.23. In 1922 there is included for special inspections $56,296.75. Those special inspections represent labor and material used in inspecting [fol. 1227] consumer's premises throughout the Brooklyn Union territory. To the best of my recollection I think that 1922 was the first charge that we had for special inspections. I knew that special inspections were being made and therefore had payroll sheets and vouchers rendered to me, so marked. Those men were out in the district inspecting the ranges and fixtures of all the Brooklyn Union consumers. That would come under the inspection. I only know that it was a charge for special inspections. The detail of those inspections, I don't know. I don't know the details of the work they did, only from experience and knowledge, I would assume that is what they were doing, adjusting the appliances for a purpose. For gas meter installation work in 1923 we expended the sum of $62,955.21, while in 1922 we expended the sum of $22,538.24. I have no explanation as to why there is such an increase in that item, further than that there were more installations made in 1923 than there were in 1922. I have a record in my office that shows the figures as to the number of meters that were installed in 1923 as compared with the number that were installed in 1922. My meter records have to be computed and take off the figures to see. Looking at the reports themselves would not give it to you. I think the

[fol. 1228] increase is accounted for by the fact that a greater number of meters was installed in 1923 over 1922.

For distribution superintendence in 1923, the amount expended was $423,532.20, and in 1922 it was $343,580.28. I have no explanation as to why 1923 increased so much over 1922. Nothing further than that there was more work done in 1923 than there was in 1922; therefore the distribution superintendence charge would naturally be more. I could not recall whether there wer- any increase in wages; I think there were some, how much I cannot say. Distribution superintendence is almost entirely a labor charge and represents the labor of the street and shop departments, general payroll, together with the foreman working for each of those departments on the district. For a thousand, there is roughly a difference of 3-tenths of a cent. In 1923 per thousand it was .0277 and in 1922 it was .0248, a difference of 3-tenths of a cent. I would say the distribution expenses ought to lessen, the more you distribute if the company is going backward; but the company seems to be progressing; therefore our charges increase. I mean that as long as the company is not dying on its feet; it is very natural that the expenses should increase slightly. That naturally depends upon [fol. 1229] the quantity of gas the company sells, and the larger quantity, the smaller cost. I cannot check the figures; repairs to gas mains, transmission mains in 1923 $7,146.05 and in 1922 $5,150.66 because my records do not split between transmission and distribution. I have some records that do. I have that data at the office. In order to cer-ify my figures, I would have to look at the payroll charge sheets and at the Street Department report.

Our total charge to repairs to gas mains, including both transmission mains and distribution mains, for 1923 is $116,500.33, and in 1922 it is $101,026.00. I don't think any charges for the maintenance or for the repair of either the distribution or the transmission mains were charged to the subsidiary companies in any way. In 1923 I expended the sum of $334,516.29 and in 1922 the sum of $315,521.94. The difference would be accounted for by the increase in the amount of the work done in repairing meters for 1923 over 1922. This repairing of meters is conducted in our company's meter repair shop. That is located on 12th Street,

South Brooklyn. In that repair shop, we repair the gas meters for the subsidiary companies as well as for the Brooklyn Union Gas Company. And I believe the repairs for gas meters come under three different characters of repairs called Adjusted, Oiled, and New Diaphragms. That [fol. 1230] distinction is so separated. The basis of the charge for repairing the meters of the subsidiary companies is based entirely on the cost of the labor and material entering into those repairs. The oiling, the adjusting, the diaphragming, divided by the number of meters repaired are taken into consideration in fixing our charge to the subsidiary companies. That cost is made up in the meter repair department, and adjusted each month according to those charges. In our meter repair shop, the repair of the subsidiaries' are done. It is all done at the same shop. So the charges for repairing meters of the Brooklyn Union Company alone is the same as the charge that is made to the subsidiary companies, that is for the meter repairs, the diaphragms and for the adjusting and the oiling. And the items that go to make up that unit figure are the labor and material item at the meter repair department. There is no charge made for the hauling of meters to and from the subsidiaries' districts because we have never allocated the staple express charge to the separate departments. The Brooklyn Union Company does that for the subsidiaries and makes no charge. There is no allocation made to the subsidiary companies of the overhead on our meter shop, for instance, our repair rental and our insurance charges and our repair charges to it.

The number of meters that were repaired in 1923 is in [fol. 1231] one of the books in evidence, the report from the meter repair department. It is not in a form that I can give the total. It would have to be computed. I am looking at Exhibit No. 267, annual report from the meter repair department for the month of December, 1923—I haven't the figures compiled for the whole year then. I don't know from this that the repairs made on the meters of the subsidiary companies for the year 1923 were 15,805 meters while the repairs made to the meters of the Brooklyn Union alone was 76,358 meters. I could check the figures that includes both the regular and prepayment meters. A prepayment meter is converted into a regular meter. We do

not withdraw the prepayment meter and add a regular meter or a new meter. We simply record the fact that the prepayment meter has been converted into a regular meter. It does not change the status of the capital account at all. We have not purchased any prepayment meters in so long a time that I could not say whether the prepayment meters cost more than the regular meters.

The question asked this morning was to check the repairs at works from 1914 to 1923, and you mentioned certain figures. I might say they were not correct with the exception of one. Repairs at works, counsel's first figure of $214,
[fol. 1232] 213.10 should read $161,983.94. That is the figure for total repairs at the works for 1914. Repairs at works for 1915, $176,898.11 and not $226,796.12. Repairs at works for 1916 was $185,574.61 and not $219,469.10. For 1917 repairs at works were $240,737.03 instead of $268,999.92.

For 1918 $279,797.67 instead of $309,400.92.

For 1919 $375,314.50 instead of $418,826.62.

For 1920 $621,151.82 instead of $658,207.63.

For 1921 $677,672.91 instead of $737,624.14.

Those figures that I have given now do not include any repairs at holders. The figures representing repairs at works from 1914 to 1923 in counsel's schedule in evidence do include holder items. Including the items to holders, counsel's figures were correct except for the year 1919. It should have been in the year 1918 $418,826.62 instead of $375,314.50. By the municipal street lighting expense, street lamp repairs for the two years, 1922 and 1923 is meant labor and material; a very slight amount of material, used in taking in or cutting off the services which lead to the public lamps, which have now become discontinued. I believe that is cutting off the service that was leading to the lamp. I haven't gone out on this work. There is a repair to a street lamp, according to the uniform system of accounts. I do no work upon the lamps themselves. The city owns the lamps, I understand, and they do their own
[fol. 1233] work, in repairing them. This work, I think, is caused by the discontinuance of the service.

Referring to commercial expenses, the general labor item for 1923 was $271,080.12 while for 1922 I have expended $209,232.64. The cause of that increase of about $62,000

represents in part increases in salaries and the charges under general labor, and probably a slight increase in help. I don't recall whether it was increased since June 1st, 1923. There very probably was an increase in some of the wages as of July 1st, 1923. Wages as opposed to salaries, salaries in commercial offices, I could not say off-hand how much of an increase we did give them in July, 1923. * * * [fol. 1234] When a consumer makes application to our company for gas the average amount of deposit is five dollars. I am not familiar with the transportation law. We collect, I think, in a great majority of cases, five dollars. If the man's bill is more than five dollars, possibly we collect the amount of his bill. When he makes application to us for gas, we require a deposit in some instances of more [fol. 1235] than five dollars. In some cases of an apartment house in certain districts, where the pepole are not steady you might say, and apt to skip out without paying for the gas, we will exact ten dollars deposit. Some large users of gas, we ask no deposit from and some we ask for more. In the days before prohibition I think we exacted twenty-five dollars from saloon keepers. Since then, I don't know what we have required. When a person makes an application to our company for gas, we usually inquire if he has been a user of gas before, and he tells us the name of the company. It is the custom to get in touch with that company to ascertain his credit to see whether he has been a good paying consumer or not. I don't remember any case where we exacted an additional deposit from a consumer, after he once started to take gas. Of course, my experience and knowledge is very limited on that because I cannot keep account of several thousands of consumers. The matter of requiring deposits from consumers is left to the discretion of the manager in charge of each of the offices, each of the commercial offices. Assuming that a person has paid five dollars deposit and is using $50 or $60 worth of gas every month, we would never require an additional deposit as long as the man pays his bill. The five dollars deposit is sufficient. We have never increased the amount of deposit on account of a consumer being slow in his pay- [fol. 1236] ments, not to my knowledge. This money is the consumer's deposit. We use that in our general business. I could not recite from memory how much we had

on deposit with our company that had been supplied by consumers on December 31st, 1922 and December 31st, 1923. It is not in this book. December 31st, 1922 it was $1,733,061.36 and the balance December 31st, 1923 was $1,873,830.70. We pay on that six per cent. Whenever a consumer discontinues the use of gas, or where he comes in and requests his deposit, and in a number of cases where we write to the consumer and ask him to come and get it when the account is closed out, we pay six per cent interest. He knows that he receives six per cent interest on his five dollars as soon as he signs his application. I have heard of people coming in and demanding their money back and not mention the fact that they are entitled to interest on it. Whenever they present their receipt, they get their deposit plus the interest. There is no comment made upon it. I don't have anything to do with that; that is an office procedure, it is not in my department. If he gives us proof that he is entitled to the money, we will issue a form of receipt for him to sign, and he receives his five dollars plus his interest. A consumer can tell us where he has been [fol. 1237] burning gas and he also knows about when he started to burn, and we always can tell pretty closely whether he is telling the truth or not. He gives his proof of identity in any way possible. That is what I meant by the form of affidavit or receipt that we make out, and then they sign it, which is an affidavit that they are entitled to the five dollars. That is, if a man comes in without his receipt for the company, he is given an affidavit to sign that he is the man and some proof of his identity is required. This affidavit is a form which we have in the company. I haven't one in my department but I can get one from the Brooklyn Branch. If a consumer dies, he doesn't as a rule come in and ask for his money. We keep it unless proof comes in to us that it belongs to somebody else. As a matter of fact, it is out of my province. It is an office procedure, not mine. I have heard about it in the company for a number of years. I remember distinctly where the daughter of a consumer came in and asked for the deposit saying that it was in the name of her father. Her father was dead, and in this same instance she brought the minister of the church with her to prove that she was telling the

truth. I remember that one instance very clearly. We have some of these amounts of moneys, consumers' deposits which we have had on hand for some years that are not called for. We do not call these unclaimed deposits. [fol. 1238] We do not transfer them to some other account after they have been kept in consumers' deposits for a certain number of years. They are all in consumers' deposits. We have an account called interest on consumers' deposits, which represents six per cent on the balance of consumers' deposits at the end of each month. That does not appear in our schedules as an operating charge nor interest on consumers' deposits. The interest is not figured on the consumers' deposit until he comes in and claims it. We go over the books and figure it up and give it to him. It is compounded every six months. What I mean by compounded is, we take the balance at the end of December and credit six per cent on that. At the end of January we pay six per cent on that balance. We don't have an account called unclaimed deposits but we have an account called unclaimed consumers' money. That represents in a large measure the amounts due consumers who have discontinued the use of gas, where we have sent checks out to them and there is no claimant. They have either moved away or disappeared and we have no possible means of finding where they are, so when that check comes back to us, it is cashed and becomes part of the unclaimed consumers' money. We carry that as a liability. Interest is not charged up there, not the entire amount. The balance in unclaimed consumers' money as of December 31st, 1922 was $13,750.78. The balance as of December 31st, 1923 was $14,610.73. It [fol. 1239] does not represent a consumer's deposit in any sense of the word, for the reason that when we send out a check to a consumer who has discontinued the use of gas, the deposit account and the interest account has been credited with that proportion. Therefore, the consumer's deposit account is clean, as far as that end is concerned. The money comes back to us on account of not being delivered or claimed. It becomes a part of the unclaimed consumer's money account. It has no relation to the deposit account or the interest on consumers' deposit account. The money in the consumers' deposits amounts to $1,733,061.36 in 1922 and in 1923 $1,873,830.70. It passes into the

general funds of the corporation. It is treated like any other cash received. I cannot trace it and tell whether it is utilized for our coal and oil or labor—that is, the operating charges any more than I could designate any part of our money. It becomes part of the general fund.

[fol. 1240] Brooklyn, New York, March 24th, 1924.

THOMAS P. PAYNE

Cross:

The wharfage for 1922 was $614.50; the wharfage for 1923 was $718. I haven't got them by works, but I have a total for all the works. In 1922 the demurrage charges were $4,943.92; in 1923 $4,242.42. The average price of 6-inch pipe as of June 1st, 1923 was $.8936926 per foot. I do not know how much that represents per ton. We bought some 6-inch pipe in 1913, 1914, 1915, 1916 and 1917; nothing in 1918, 1919, or 1920. I could not give the dates our average of pipes covers, that is years, but I know that it goes back for twenty years anyway, down to 1923. We carry it right along, for the different years. I could not tell about the stock of pipe, 6-inch pipe, that they had on hand in 1920. Our books show that. The quantity of pipe on hand at the end of any month is divided into the dollars and cents represented by that pipe and an average price is arrived at. That is the first step,—in other words, at the end of any month our books show quantity and price at which I have bought pipe in the past. Then we strike an average price for the end of that period. The next step is to deduct from the quantity of pipe we have on hand the quantity that we will use, and that gives us the balance. So that where you start off, for example, at [fol. 1241] the first of the month with 5,000 feet of pipe and you use during the month 500 feet of pipe, you have left 4,500 feet of pipe at the end of that particular month. That 4,500 feet of pipe is represented by so many dollars and cents. The purchase price, and an average price is arrived at. During the month, the purchases of pipe, that would be at a different figure—let us say that we have pur-

chased another thousand. That will leave us at the end of that month with 5,500 feet of pipe for so much money, and a new average price is struck, so that by the continuous performance of using the quantity of pipe that you have on hand at the end of each month and plussing it by the purchases during that month, your average price changes each month. At the end of the year 1920 our books contained a statement of the account of pipe on hand, and the books contained also a statement of the amount at which pipe was carried in the inventory as a valuation. That valuation was arrived at by having before me the quantity of pipe purchased by this corporation during its entire existence—6-inch pipe. The price paid for each invoice during that entire period, and an average per foot was thus taken, and that constituted our inventory value of 6-inch pipe on hand on the 31st day of December, 1920. I have stated that no 6-inch pipe was purchased in 1920, but some was purchased in the year 1921. On the 31st [fol. 1242] day of December, 1921, we again took an inventory of—our books have an entry of the inventory taken of the 6-inch pipe on hand on the 31st day of December, 1921, and that would include whatever purchases we made during the year 1921, added to what we had on hand January 1, 1921, from which would have been deducted whatever we used during that year. The price at which that pipe thus inventoried was carried on our books on the 31st day of December, 1921, was arrived at, by taking the aggregate amount of pipe purchased by the corporation from its inception down through and including the entire year 1921, and the prices paid, and then, ascertaining the average again for that year. In other words at the end of each month or at the end of each year the quantity of pipe on hand, divided into the dollars and cents represented by that pipe, gives you the average price. At the end of 1921 I ascertained how much 6-inch pipe had been purchased by this corporation throughout its existence down to that time, December 31, 1921. On December 31, 1921, I took an inventory and I did that each month; on November 30, 1921, also. Suppose we take November 30, 1921, as our starting point. There I ascertained how many feet of pipe we actually had on hand and then I ascertained how

much pipe we bought during that month of November. My first step is to find out all that I have added to my 6-inch pipe during the month. On November 1, 1921, my books showed [fol. 1243] the amount of pipe on hand, 6-inch pipe. The average price of the pipe on November 1, 1921, represents the average price of the pipe on hand as of that date. On the first day of November I know how much pipe has been purchased by this corporation throughout its existence up to that moment, up to October 31st, and I know the aggregate amount of money that has been paid for all the pipe purchased during those years. I have done that each month as I have gone along. I divide the number of feet of pipe purchased during all those years into the aggregate amount of money paid for the pipe, and the dividend gives me the average price per foot of that pipe. That is done month by month. I want to make clear the use of the word "aggregate." I haven't any figure on my books that tells me the total amount of 6 inch pipe the company has ever bought, and the total amount in dollars and cents that that pipe represents, because each month my duty is to find out what is the average price of 6 inch pipe to-day on my books. At the end of the first month of the existence of this corporation I took note of the pipe purchased during that month. I took note of the amount of pipe we had on hand when we started in; then I ascertained what we had paid for the pipe purchased during that month. Then I take the amount purchased during that month and the amount on hand at the start. That gives me the amount which we use as a divisor into the amount of money paid [fol. 1244] for the pipe we purchased added to whatever valuation we put on the pipe we had when we started out, and the dividend I call average value per foot for pipe on hand. The second month I start with the proposition that the pipe on hand cost us that average. Then I ascertain how much we have on hand, added to what we bought, and that gives me the number of feet on hand at the end of the month. The second month of my existence I have a certain quantity of pipe at a certain amount of money. Now, to that point there, I don't care what the average price is. We have a certain amount of pipe and a certain amount of money, which consists of what we bought during the month,

as well as what we had left over at the beginning. This figure is the total amount of 6-inch pipe, and it represents so many dollars. Those dollars come from the accumulation of the 6-inch pipe by reason of purchases. At the beginning of the month we had on hand so and so many feet of pipe, and the average price of that had been ascertained, and that is carried on our books at that valuation. During the month we bought some more, and we paid so and so much for it. What quantity of pipe we had on hand at the end of the month is added to the quantity of pipe purchased during the month, during the current month. Take for example, November 1st, 1920—I have got so many feet of pipe on hand at so much money. During the month of [fol. 1245] November I have bought so much pipe, so many feet of pipe at so many dollars and cents. At the end of that, after all of my purchases are made, I strike a total. I add to the total of the pipe on hand on the 1st of November, the quantity purchased during the month of November, and divide that total number of feet into the total dollars and cents, and arrive at an average price for the month of November.

If I assumed at the end of any month—October 31st,—we had a thousand feet of 6-inch pipe on hand and the average ascertained by my calculation, was $2. a foot, our books would show 1,000 feet of 6 inch pipe, $2,000. If during that month and the succeeding month of November we purchased another 1,000 feet of 6-inch pipe and paid $4 a foot for it, then at the end of the month our books would show 2,000 feet of pipe at a gross price of $6,000, or an average of $3 a foot. If at the end of October in a given year we had 100 feet of 6-inch ppie on hand and the average taken as I have explained would show that that has cost the company an average of $2 a foot, our books would stand 100 feet of 6-inch pipe inventoried at $200, and if during that month of November, and the succeeding month we purchased 1,900 feet of pipe at $4 a foot, then at the end of the month we would stand with 2,000 feet of pipe having cost $7,800, and we would strike a new average, then by driving the 2,000 into the $7,800 and the new entry would be 2,000 feet of pipe at $3.90 a foot. The percentage of tar recovered dur- [fol. 1246] ing 1922 for the Citizens Works was 15.01 per cent; Fulton Works 9.34 per cent; Nassau Works, 18.85

per cent; Williamsburgh Works, 18.13 per cent; Equity Works, 6.94 per cent; Metropolitan Works, 17.21 per cent; average for the year, 16.05 for all works. For 1923, Citizens Works, 23.02 per cent; Fulton Works, 14.37 per cent; Nassau Works, 22.64 per cent; Williamsburgh Works, 18.28 per cent; Equity Works, 11.19 per cent; Metropolitan Works, 13.79 per cent; average for all works, 17.98 per cent. Plaintiff produces at defendants' request minutes of the meeting of the Board of Directors, Brooklyn Union Gas Company, held July 28th, 1921, and minutes of the meeting held February 14th, 1922, which I believe contain the information pertaining to unaccounted for gas. Plaintiff produces minutes of a special meeting of the Board of Directors of the Brooklyn Union Gas Company, held September 2nd, 1909. The resolution of the Board of Directors on the 2nd day of September, 1909, is the resolution fixing the unaccounted-for gas for the subsidiary companies at 8 per cent. It fixes the plan, or the rule of the Directors to charge the subsidiaries with 8 per cent. for unaccounted-for gas; 8 per cent. of the total sold and used.

(Mr. Cummings: I will read the resolution into the record:)

"Minutes of a Special Meeting of the Board of Directors of the Brooklyn Union Gas Company Held at Noon, Thursday, the 2nd of September, 1909

[fol. 1247] "Present: Messrs. D. G. Legget, William Rockefeller, H. W. Tannon, H. H. Rogers, and James Jourdan.

"The President in the Chair.

"Resolved that from and after the 1st day of September, 1909 the price of gas charged to the Newtown, Jamaica, Richmond Hill and Woodhaven Gas Companies be reduced from 60 cents to the rate of 50 cents per 1,000 cubic feet and that the charge for unaccounted-for gas be reduced from 12 per cent. to 8 per cent."

We charged the subsidiary companies according to that resolution 8 per cent. for unaccounted-for gas. It represents 8 per cent. of what each sub-company sold itself and used. I took the total amount reported by the particular

subsidiaries as sold and used and added them together, and then I divided that amount by a certain figure. Divided by 92 in order to charge them 8 per cent. unaccounted for. That method was followed from 1909 down to 1921, I think.

This is the resolution of the Board of Directors of July 28th, 1921. It is the resolution which changed the method of charging the subsidiaries for the unaccounted-for gas.

(Mr. Cummings: I believe I will read that resolution into the record, too.)

"A regular meeting of the Board of Directors of the Brooklyn Union Gas Company was held Thursday, July 28th, 1921, at 2:30 P. M.

"Present: Messrs. William Rockefeller, D. G. Legget, E. [fol. 1248] R. Chapman, William G. Rockefeller, James H. Jourdan.

"The President in the chair.

"The President stated that after a thorough study and investigation of the matter of unaccounted-for gas, it was evident that the estimate of 8 per cent. for unaccounted-for gas used in figuring the quantity of gas delivered to the subsidiary companies under resolution adopted by the Board at meeting held December 23rd, 1919, was insufficient and he recommended that beginning with the month of July, 1921, the estimate of 8 per cent. be discontinued and thereafter in substitution therefor the percentage of unaccounted-for gas computed each month for the Brooklyn Union System should be used in determining the quantity of gas delivered to the respective subsidiary companies."

The Consumption per mile of main of the Brooklyn Union Company for the year 1922 was 13,298,565. Newtown Company 6,015,323. Richmond Hill, 5,193,805. Jamaica, 4,646,920. Woodhaven, 4,180,818. Flatbush 8,660,797. Total for the System, 10,593,976. For the year 1923, Brooklyn Union, 14,483,504. Newtown, 6,835,432. Richmond Hill, 6,904,430. Jamaica, 5,436,932. Woodhaven, 4,349,779. Flatbush, 9,554,883. Total for the System, 11,406,087.

Miles of mains, December 31st, 1922: Brooklyn Union, 1,042.21; Newton, 224.57; Richmond Hill, 35.48; Jamaica, 97.27; Woodhaven, 124.40; Flatbush, 128.39. Total for the [fol. 1249] system, 1,652.32. That is total miles of mains, both transmission and distribution. Total miles of mains

December 31st, 1923: Brooklyn, 1,056.40; Newtown, 240.20; Richmond Hill, 37.06; Jamaica, 105.33; Woodhaven, 157.69; Flatbush, 132.26. Total, 1,728.94. I got those figures from my records, at the request of the Attorney-General, and I know them to be correct.

The number of new sets in 1922 for the Brooklyn Union Gas Company was 13,306. The number of new sets for 1923 was 15,004; an increase of 12.76 per cent. Meters set other than new sets for 1922, 83,576. For 1923, 100,010. Per cent of increase 19.66 per cent. New sets represent meters set where gas had never been used before. Other than new sets represent where gas had been previously used and the meters changed for various reasons. The total number of meters set for 1922 was 96,882 and the total for 1923 was 115,014. This is Brooklyn Union. I have obtained those figures from my records and produce them at the Attorney-General's request, and know them to be correct.

I do not recall the number of meters that counsel mentioned, but I could not check them at all. I do not know where the figures came from. I can give what the actual number of meters was that were repaired. For the Brooklyn Union Company in 1923 it was 84,675, or a total number of meters repaired by the Meter Repair Department for [fol. 1250] the System of 101,738, leaving 17,063 meters that were repaired for the subsidiary companies. That includes both regular and prepayment meters. That was 1923. Total number of meters repaired by the meter repair department for the year 1922 was 105,109, of which 88,942 were Brooklyn Union meters and 16,167 subsidiary company meters. I checked the expenditures for distribution repairs and found them correct. I described what was the expenditure made for distribution superintendence. A portion of that expenditure is allocated to the subsidiary companies. That was allocated in a blanket allocation that we make each month to subsidiary companies, and distribution supplies and expenses, that is an item that is included in this so-called allocation. I am not sure about both of those items, distribution superintendence and distribution supplies and expenses. Distribution superintendence is; distribution supplies and expenses is not. I charge the subsidiary companies according to the resolution of the

Board of Directors. The resolution of the Board of Directors has as its basis a computation made under my jurisdiction, and Mr. Blanchfield wrote a letter to Mr. Jourdan advising him as to these charges—proper charges to make upon the subsidiary companies.

The general office of the shop distribution department is allocated to the subsidiaries. There is a general office in 176 Remsen Street where all the shop's distribution gen- [fol. 1251] eral clerks are. No other portion of it is allocated. The shop distribution department's function is to take care of work required on consumer's premises. The subsidiary companies, in the case of the Newtown, Richmond Hill, Woodhaven and Jamaica have their own shops right in the building. The shop is in the basement of each of those offices, and the labor and material is charged direct. They have their own payroll, in other words, and their own material and supply reports, and they take care of their own work on consumers' premises. I said that all of the work required on consumers' premises was performed by the shop distribution department. Distribution superintendence does not represent the work on consumers' premises. That is one of the accounts that a part of the shop distribution expenses are chargeable to. Distribution superintendence is an account of itself. In the street, holder and shop departments each one has a distribution superintendence charge. The same applies in the distribution supplies and expenses, and gas meter installation work. Gas meter installation and work on consumers' premises is purely a shop distribution charge. This distribution superintendence which appears on our schedule is made up of expenses in several departments, one of which departments is the shop distribution department. Distribution supplies and expenses also is made up from four or five departments, one of which is the shop distribution depart- [fol. 1252] ment. The work done in the shop distribution department is on the consumers' premises in the territory of the Brooklyn Union alone, and is so recorded on this schedule. The work done by the shop distribution department for subsidiary companies is chargeable direct. They have their own payrolls except for the general expenses of the office in 176 Remsen Street. A proportion of the shop distribution department general is allocated to the subsidiaries, on this blanket allocation that I speak of.

When meters are purchased for the subsidiaries they come tagged with the subsidiary's name and number, and they are brought in from the point of receipt rather point of arrival into our shop, and delivered to our meter repair department of the Brooklyn Union Company. Those are received by truck and sent by truck. New meters are delivered by truck. There are several concerns that we buy them from: The American Meter Company, the Superior Meter Company, John J. Griffin and Company. I think that covers them all. The point of shipment of the American Meter Company is from the American Meter Company's factory, but I don't know the address. They have one in Albany. I do not know that they truck them from Albany. It is my understanding that all meters are received by the Brooklyn Union Company in trucks. They are brought into the shop, and inspected and tested before [fol. 1253] being sent out on the district of the subsidiaries. I do not think there is any charge made to the subsidiary companies for testing or inspecting the meters. They are delivered to the territory of the subsidiaries by the Brooklyn Union Company after they are tested and then inspected. The demand for meters in the subsidiary districts is rather great, has been for the last couple of years. There is a great amount of building going on in the districts served by the subsidiaries. We do not take into our capital account these meters as they are purchased, even though they are labeled with the names of the subsidiary companies. We charge them directly to the subsidiaries. They are not taken into the capital account of the Brooklyn Union, they are charged to the capital account of each of the subsidary companies. Those figures do not reach our books at any time in our capital accounts. That is, they are not charged in our capital account when we purchased them and then charged out again when we deliver them. If a meter is directly badged to the Newtown Company, it is charged to the Newtown Company directly. If a new meter is not badged or if a meter is received and not badged, it is charged to the Brooklyn Union Company. If, subsequently, a Newtown badge is put on that meter, it is taken out of the Brooklyn Union capital and charged to the company that receives it. The last inventory taken of our materials and supplies was as of September 30, 1923. That

[fol. 1254] is physical inventory, not theoretical inventory. These pipe inventories that I was asked about early in the morning, where I take our average price per month, was based on a physical inventory, not a theoretical inventory. That inventory is taken in each one of our works where they have stock. We have also an inventory as of September 30, 1923, and one of September 30, 1922, and having taken a physical inventory, the theoretical inventory is kept recent until the next physical inventory is taken, except that we make adjustments every year when the inventories are taken. Given a physical inventory in 1923, that will remain as a theoretical inventory up to date until we take our next physical inventory in 1924. When the inventory is taken it is adjusted with the books, that is with the materials shown on the books, and then a fresh inventory starts on October 1st, for example, 1923, and will go to whatever period I designate in 1924 to make a count.

We carry an account called "Promotion Office Expense." That covers the expenses, the labor and material of the New Business Department. The New Business Department is a department which promotes the sale of appliances. Under that general heading we have three subdivisions: Promotion, management, demonstrations and other promotion business expenses. The Brooklyn Union Company purchases gas appliances that are supplied to the sub- [fol. 1255] sidiary companies. The New Business Department manager makes a survey of the Brooklyn System at various intervals and determines what appliances are necessary in order to keep the stock of sufficient size, and makes out a requisition which is forwarded to the Purchasing Agent, and the stoves that he designates, or the appliances that he so designates are purchased. Mr. Wiske is the New Business manager. The appliances for the subsidiary companies were stored at 1024 Fulton Street, and as they needed the appliances or the appliances were sold, deliveries were made from 1024 Fulton Street to whatever location was designated on the sale ticket. When the subsidiaries sell an appliance, it is delivered from this 1024 Fulton Street, in mostly all cases. That is, for instance if the Woodhaven Company should sell an appliance, it is delivered from here, 1024 Fulton Street, in most cases. The Brooklyn Union Company trucks deliver it. I

think in most cases they arrive by freight and then we send our wagon over to the freight terminal and bring them over to the warehouse. That is, the Brooklyn Union Company does that. The Brooklyn Union appliances are stored awaiting sale in the same place—1024 Fulton Street. I would like to interject that I recollect in 1922 and 1923, I think in the case of the Jamaica Company, they had a small stock of appliances of their own, so they could make quicker deliveries. I don't think anything is in the building at 130 [fol. 1256] Atlantic Avenue. There were at one time, I think in 1922 or 1923 and prior to that, some lamps and lamp parts, stored in that building, but they are not there now. I haven't been down there for some time, and I couldn't say what is in that building now. Up to a certain date, which I do not recollect, there were stoves stored there—stoves and lamps. That was for the use of the Brooklyn Union Company itself. Those are the only two places where they store those, that is, 1024 Fulton Street and 130 Atlantic Avenue.

If a Newtown Consumer, for example, should come into 180 Remsen Street and pick out an appliance, the name and address is taken and that sale is reported to the Newtown Company; a sales ticket is made out, on a Newtown Company form, and that comes through as a Newtown Company sale. The cash collected is credited against the Newtown Company account. It is handled in every respect just the same as if the subsidiary companies sold it, even though they bought it at 180 Remsen Street. It is just an accommodation. There are quite a few people selling cheap stoves and gas lamps; that is the kind of competition we have. Our competition comes in trying to keep the people satisfied. We do not charge them more. We give them value received, dollar for dollar. Any person who deals in appliances, outside of the regularly known manufacturers, is a competitor. All the large department stores, like Macy [fol. 1257] and Gimbel's and so forth, are among our cheap competitors. We generally supply the contractors building a large apartment house, if their credit is good. Where all arrangements are agreeable of course, we are in the market to do that kind of business. As to whether contractors or plumbers buy direct, or whether they buy through us generally, I think it is about a 50-50 proposition.

We don't do any wholesaling of our appliances. We sell both to owners and contractors and—I don't know this for a fact, but I assume that if a storekeeper wanted a stove that he didn't have in stock we would sell it to him. I mean a retail dealer. We do not stock up a retail dealer with his stock. We have a great many sales to contractors of large numbers of stoves, only in the case of builders putting up apartment houses. In that case we would outfit the whole building with stoves. The amount of gas appliances on hand in 1922, December 31st, was $145,712.41. In 1923, December 31st, $227,252.09. That is for the Brooklyn Union Company alone. That is not all the money spent during the year for appliances. That is quite a computation; I would have to compile that.

The advertising item consists of various forms of advertising in the daily papers for the promotion of business. Advertising in 1922 was $5,103.21, and in 1923 it was $24,489.37 almost five times as much in 1923 as it was in 1922. It was necessary to get the facts before the public, [fol. 1258] the fact that we were a live gas company, and we would like to have them get some appliances from us. That is my explanation of that increase of five times as much. Generally speaking, the advertisements feature the various types of gas appliances that we have for sale. There is a suggestion to those that may be interested in the purchase of a gas appliance, that they could step into the nearest showroom or one of our offices. The subsidiaries have their own advertising; it is charged to them, and we also advertise to some extent for the subsidiaries, that is, we state in our ads., to step into the nearest gas office and get one of those appliances. We advertise in the Brooklyn Standard Union, and the Eagle, the Brooklyn Citizen, the Brooklyn Daily Times, and The Chat, and we are advertising for business out in Newtown. That is, the Newtown Company is advertising for business in the Long Island Daily Press. A great many of these papers in which we advertise circulate throughout the territory of the subsidiaries. These advertisements benefit the consumers of the subsidiaries as well as our own consumers. That is, they result in purchases by consumers of the subsidiary companies as well as our own. There was no extensive advertising in 1923 over 1922 along any other line except

the gas appliance. The opinion of the meeting of engineers in the City of New York as to the dangers of 650 B. t. u.'s was advertised jointly by some of the companies. [fol. 1259] In 1922 for demonstrations we had $58,363.89 and in 1923 we have $91,589.99, about $33,000 increase, or something like that. There was an increased amount of labor and material charged to demonstrations in 1923 over 1922. The mere fact of advertising appliances for sale brings people in to examine what we advertise. Therefore, you must have people to demonstrate your product or your merchandise. We have demonstrators in different parts of our commercial offices, too, scattered throughout the City; also in the subsidiary companies. There was a certain space allotted to the Brooklyn Union Gas Company at the Industrial Exhibition and we had appliances there on exhibition. We had to have people there to demonstrate their uses, from which we derived sales. The subsidiary companies probably derived sales by that demonstration.

The general officers are: the President, the Vice-President, the Secretary, the Assistant Treasurers, the Assistant Secretaries, the auditor and the Assistant Auditor. There had been an increase on January 1st, 1924 of the salaries of those officers; sort of a general increase. All of those officers work for the subsidiaries as well as the Brooklyn Union Company, and their salary is allocated on this blanket allocation, which is allocated in accordance with the amount of gas sold, that is, by the Brooklyn Union Company and the subsidiaries. It is the percentage of each subsidiary company's sales to the total sales. That is, in [fol. 1260] 1922 there was made up an estimate of the amount of sales that the Brooklyn Union Company would have in 1923 and the subsidiaries in 1923. We had to make an estimate in order to arrive at the requirements for the current year, and it is based on an estimate that was made by Mr. Blanchfield of the consumption which he thought would take place in the territory of the Brooklyn Union and the subsidiaries in 1923. The figures are made by Mr. Blanchfield. The method has been approved by myself and others. None of the salaries of any of the general officers are allocated to the electrical business of the Flatbush Company. Through this blanket allocation a certain portion of those expenses was allocated to the Flatbush Gas Company. In that allocation the electric company at that

time was owned by the Flatbush Gas Company, and no consideration was given to the electrical end of the business of the Flatbush Gas Company. The officers of the Flatbush Gas Company are: Mr. Chapman is the President; Mr. Staniford is Vice-president, and Mr. McGowan is Secretary, and Mr. Wellington is Treasurer, and I am the Auditor and Mr. Blanchfield is the Assistant Auditor. The records of the electrical department of the Flatbush Gas Company are kept in my department, I mean the general records—not the consumers' ledgers, just the general books. There is an allocation made to the Flatbush Gas Company based upon the relative consumption of gas between them. I split the expenses of the Flatbush Gas Company, that is, [fol. 1261] for those people who work directly for both, according to the number of meters at the end of certain periods; if the electric meters are about the same as the gas meters, it is a fifty-fifty break on the expenses. I have two clerks in my office who devote their entire time to keeping the Flatbush books. I make a charge to the Flatbush Gas Company for those two clerks. Their time, when it arrives on the Flatbush books, is split fifty for gas and fifty for electric, and they do not cost the Brooklyn Union anything. That is the only direct allocation that is made. My time is not allocated, nor Mr. Blanchfield's, nor Mr. Staniford's time. They spend some time for the Flatbush Gas Company relative to the electrical business as well as the gas, but it would be an impossibility to split the time to make a charge. That is not the reason that we don't. We don't make it. I don't know whether there is any reason why, but we don't. The allocation that is made between the Brooklyn Union and the Flatbush Gas Company totally disregards the fact that they have an electrical end to their business.

The increase in salaries was general, to everybody who drew over $4,000 a year. "51 officials and supervisory employees of various departments receiving in excess of $4,000 per annum, whose present average compensation is $6,666. aggregating an increase in payroll of $27,230 per annum. [fol. 1262] or an average of $534 per man. A list of those affected is on file in the office of the Secretary, effective January 1st, 1924." My salary was $7,000 a year prior to December 31, 1923. I received an increase of $500. I could not say offhand what the increases to others were. I haven't the list in mind.

Salaries and expenses of general office clerks in 1922 were $181,529.44, and in 1923 it was $216,898.25. The increase was due to a natural—I don't know just how to put it. The clerks in the general office merited an increase and got it. I for one recommended the increase of forty-one and got it for them. It was based on what I thought each one ought to have—no percentage entered into it at all. The Miscellaneous General Expense in 1922 was $348,354.20, and in 1923 it was $465,219.59. In that account there was included the expenses for this litigation. The item in 1923 representing expenses in this rate case was $73,706.05. I just have a total, that is all. I didn't have a report made up showing the different items which I thought went into the rate case expense. There is a total of some $94,000. $73,000 of it went into this particular account. I have not found during recess where the remaining $20,000 went. The expenses which the company had incurred in this rate case were: Charges to the Stillman Appellate Printing Company of $1,914.80; Charges to Cullen & Dykman, $15,172.04; Northeastern Construction Company, $13,279.81; [fol. 1263] Bartlett-Hayward Company, $60,233.04; Adams & Chambers, $193.20; W. G. Briggs, $3,732.00; Total $94,524.89. Those expenditures are in connection with this rate case. This covers the entire year of 1923. In my Miscellaneous General Expense, there is included the items which have been called to my attention, paid to the Northeastern Construction Company, the Bartlett-Hayward Company and the Adams & Chambers item. In my law expense is included the Stillman Appellate Printing Co. item, the Cullen & Dykman item and the W. G. Briggs item. I suppose that is the account they are charged to, but according to my computation, the amount of $94,524.89 was spent for this present rate proceeding. I recall a charge from Moran, Maurice & Proctor, amounting to $6,000. I think that charge was for engineering on Gowanus Tunnel. There was a charge included in Miscellaneous General Expense of $409. for Adams & Chambers, of November 28th, 1923, but just what the particulars are I cannot recall. I do not see any charge to them of $409. I do not find the charge of $193.20, but there is a charge in the month of November, 1923, in Miscellaneous General Expense, to Adams & Chambers of $409.80. I would have to look at the bill to be

positive what the charge was for. I recollect purchasing the proceedings in the New York & Queens Gas Company case. I cannot identify that item as being the expenditure for that; the ledger account does not show the detail of the [fol. 1264] charge. I have some bills from Colson, Brice & McCann, in our Miscellaneous General Expense. I think they were consulting engineers, I am not postive, in connection with the sewer at the Citizens Works.

Mr. J. A. Dykman: It seems, Mr. Payne, that they are the official reporters for the Public Service Commission.

The Witness: Well, we had consulting engineers with very nearly that name, and I may have thought that it was it.

Mr. J. A. Dykman: These people are your official stenographers, aren't they?

Mr. Deegan: Surely.

The Witness: I cannot recall the details of those charges.

We have in 1923 in that account, expenditure, two of them, in fact two of them for $7,500 each to R. A. Carter. I think they are both in the year 1923; at least the bill was rendered in December of each year. I have one charge of $7,500 in the month of February, 1923. That is for services performed in 1922, apparently. I don't see another bill rendered by him for the latter part of 1923. I don't find the second charge of $7,500 in 1923 to R. A. Carter. I have gone back as far as April, 1922, and I don't see the second charge. Mr. Carter was an employee or an officer [fol. 1265] of the Consolidated Gas Company, who just recently died. He performed services in connection with establishing the dollar rate, also in connection with the B. T. U. standard. I would not say that he has been employed regularly. I would not want to say for a positive fact that there was such an amount paid him in 1921 and 1920. I have some charges to Charles W. Staniford in 1923, for services for consulting engineer at the Citizens Works, $500 also at the Nassau Works, $500 and also the Tunnel at the Citizens Works, $500 amounting to $1,500, in the year 1923. Mr. Staniford is a brother of the Vice-president, and is in business as a consulting engineer.

I have some charges for the Northeastern Construction Company, amounting to $3,863.12 for valuation of the build-

ings, an item of August 6th, 1923, one of October 31, 1923, and one of November 2nd, 1923, and one of November 30, 1923, I think. That is included in our charge here of $13,-279.81. The first item of $3,863.12 is marked "Northeastern Construction Company, labor" I believe, on our books in our general miscellaneous accounts. I cannot tie it in with the exact figures, but I know that the Northeastern Construction Company charges were charged to rate case expenses. I have there on November 5, 1923 a charge made to the Inventories Computing Company for computing extensions of an inventory, amounting to $499.17. I have that charge made every year. The volume of the inventories is [fol. 1266] so great that it can not be handled in my own office, so I let it out. This is computing extensions on our inventories. We take a complete inventory each year of materials and supplies. We do not make an inventory of our physical properties each year. This hasn't anything to do with making extensions of an inventory of any rate case matter.

On April 12, 1923, we made a contribution to the Empire State Gas & Electric Association, the committee on Public Utility Information, $840.78. That is a contribution made to the Empire State Association to enable the Brooklyn Union Company to get the latest news on public utilities. It is a general line of statistics such as is furnished by a concern of that character, to keep the Brooklyn Union Company informed as to the operations of other companies. We also have another charge to the New York State Committee on Public Utilities information amounting to $885.50, as of September 30, 1923. That is the same character of information as the other. I do not know the functions of each of those concerns. The Progress Club is an organization of the Brooklyn Union Gas Company made up of the employees of the several departments. There is a small amount of dues charged to each one to make each employee feel as if he had something to say in its affairs, and at stated times the Brooklyn Union Company pays a certain amount of money to allow them to run off an entertainment. It is done in order to promote welfare and good-will amongst [fol. 1267] the employees. The Progress Club in August ran an outing which all the employees attended, and the expenses of that item could not be borne by the Club it-

self, so the Brooklyn Union Company made a payment to reimburse them in order to have it successful. They gave a Christmas tree entertainment for all of the children of the employees of the company. They had to accommodate so many of the employees, they had to hire a hall. They had a Christmas Tree and gave a small present to every child.

The expenditure amounting to $136,126.87 covers the insurance for fire, fidelity, and group life insurance. The Workmen's Compensation Insurance is handled separately. We do not carry the fire insurance with one company. We arrive at the valuation of our various properties for the purpose of insurance through the officers of the company in connection with the Engineering Department. Mr. Staniford directs the insurance, and he is supplied with data from the Engineering Department as to the properties and their insurable value. I assume he must be. I have nothing whatever to do with the placing of insurance. The Fidelity insurance covers the bonds on employees who handle money—the cashiers, collectors, and some of the meter readers, and I think I myself am included in that. There is no allocation of that account made in any way between the company and the subsidiaries. The group life insurance [fol. 1268] represents the premiums paid on the lives of the employees of the company who have been in service for one year or more. Each company has its own charge, there is no allocation. Each company has its own policy; therefore each company pays its own premium. I am on the Brooklyn Union payroll, but I do work for the subsidiaries. The Brooklyn Union carries the insurance for me—whatever payroll an employee is on, that company pays the premium. We had a good many of the men who do work for the subsidiaries on the Brooklyn Union payroll, but their time is so charged to the sub-companies when they perform the work. All our general officers and all the men in my department work to some extent in the interest of the subsidiaries, but the group life insurance is not charged on the basis of what work an employee does. It is based on what payroll his name appears on, and a man only appears on one payroll of the company. All the employees in my department, including the general officers and myself, appear on the Brooklyn Union payroll. All of the people

on the Brooklyn Union payroll are charged against this Brooklyn Union group life insurance. They do some work for the subsidiaries. We do not allocate any of the group insurance premiums. It is not allocatable in the way counsel puts it. If a man is carried on the Brooklyn Union payroll and paid by the Brooklyn Union Company, it does not make any difference what kind of work he does for any-[fol. 1269] body else; he is still a Brooklyn Union employee, for the purpose of this insurance. If he is transferred from the Brooklyn Union payroll permanently to another payroll, the policy will be changed and he will be included on that policy, and if he be included on the Brooklyn Union payroll, but, as a matter of fact, performs services for the subsidiaries as well as for the Brooklyn Union, still the premium on his life insurance is paid by the Brooklyn Union, exclusively, and no part of that premium is paid by the subsidiaries. That is, it is not paid by the other companies, unless he is permanently transferred to that company. In our Workmen's Compensation, our practice has been since 1915 to set up $100,000 annually in this account. On December 31st, 1923, the balance of the account Casualties and Insurance Reserve was $413,192.61. That $100,000 covers more than Workmen's Compensation. It is the Workman's Compensation and other Liability Insurance. It is set up to provide for the payment of compensation awards made to employees who have been injured. It is a contingent fund, and for damage to property other than the property of the Brooklyn Union Gas Company. We don't call it a contingent fund, we call it an insurance reserve, but it is a contingent fund, and as the losses come along, they are paid out of that fund. It may show a surplus or a deficiency, contingent upon the experience of the year. Our expenditure from this fund in 1915 was [fol. 1270] $33,353.81; in 1916, it was $33,661.01; in 1917, $38,868.84; in 1918, $50,739.53; in 1919, $47,871.61; in 1920, $51,341.95; and in 1921 it was $54,473.89, and at that time we had a balance of $428,524.27. In 1922 we expended more than the reserve for that year. In that one year we spent $128,624.99, and that was occasioned by the collapse of the sewer at the Citizens Works; that was a large proportion of it. The collapse of that sewer occasioned an expenditure of $57,989.24, and this year our expenditures

or charges to the fund amounted to $88,467.69, I mean the year 1923. I can not explain how that expenditure was occasioned.

[fol. 1271] Brooklyn, New York, March 16th, 1924.

THOMAS P. PAYNE

Cross:

On December 31st, 1920, we had 6,269 feet of 6 inch pipe in stock at a price per foot of $1.1834517. On December 31st, 1922, we had 17,732 feet of 6 inch pipe in stock at a price of $.8139581. We were carrying it at a higher price per foot on December 31st, 1920 than we were on December 31st, 1922; and we had on hand almost three times as much pipe. That is limited to six inch pipe. That is the pipe they use to a greater extent. Adams and Chambers bill for $409.80 on November, 1923 was for a copy of the proceedings of the New York and Queens Gas Company Case.

In 1923 we made a payment to Colson, Brice & McCain of $61.80. That was for one copy of minutes of a hearing of December 18 and 19, 1922 in the Matter of Rates charged for gas for the Nassau & Suffolk Lighting Company in the town of North Hempstead and the Villages of Freeport and Rockville Center. That is the only charge in 1923. I also ascertained that the charge of $3,863.12 of the Northeastern Construction Company was including the amount which you set up as being rate case expense. The bills rendered by [fol. 1272] R. A. Carter were one bill in February 1922 for $7,500. There was another bill paid in 1923 for $7,500. There were services rendered in connection with the establishing of the $1.15 rate and the B. T. U. standard. I do not know what services he performed for us. I do not know how long it took him to perform them. I do not know anything about it. The President and the Vice-President, I assume, would know about it. The bills of Owens and Phillips dated January 1st, 1923, in the amount of $2,252.84—$1,725.22 was charged to Prepaid Insurance. $527.62 was charged to Miscellaneous General Expenses, for the reason that the bill was made out to the order of the Brooklyn Union Gas Company, and the $527.62 was chargeable to the subsidiary companies. It was put into

the Miscellaneous General Expenses Account in order to obtain a route to charge it out direct to the subsidiaries. We charged it to the subsidiaries. It is not in the expenditure if the accountants who saw the charge in the first place had followed it through to the credit. It is charged in Miscellaneous General Expenses and immediately taken out the same month; so it is really, as a matter of fact, not in the Miscellaneous General Expenses. The charges made by Mr. Staniford's brother and also by the engineer of [fol. 1273] Moran, Maurice & Proctor amounting to $6,000 were carried in Miscellaneous General Expenses for the reason that when the bills came through I did not know to what account to charge these engineering services to, so as a temporary resting place I put them in Miscellaneous General Expenses. Then at a future date, that is, in December 1923 I cleared the charge out of Miscellaneous General Expenses and charged it to Trunk Lines and Mains. And it is a charge which goes under my charge for engineering. It is in Trunk Lines and Mains now. The Engineering and Superintendence Account in the Uniform System of Accounts is supposed to be an account to contain the charges of the General Construction Department of the company working on several jobs—Preliminary Engineering work, you might say, in the general character. Where you know exactly what the charge is going to be, why you would charge it to that capital account and not to engineering.

The fire insurance of the subsidiary companies is paid by them. The fire insurance carried on our works is allocated in this blanket allocation that we are coming to before long. On our insurance policy we have a schedule, showing the insurable value of each part of each building and contents. There is such a schedule on the policies. That is part of the policy and is attached to the policy. We [fol. 1274] furnish the figures to the broker; the allocation is done by us. They call for so much insurance upon such and such property, and the aggregate amount of insurance is divided or allocated to the properties. The form is a stock form.

The expenditure for Workmen's Compensation of $88,467.69 in 1923 is made up of the charges to casualty insurance reserve by injuries to employees, $20,000. The full

amount is charged to casualty insurance reserve by injuries to employees, $20,736.98, other accident expense of $1,417.03, Medical expenses of $18,191.67, Claim Department expenses of $14,823.56, other personal injuries and property damages of $9,744.20, Compensation Awards of $20,273.10, law expenses connected with damages, that is, other personal injuries and property damage, $3,281.15, making a total of $88,467.69. In 1922 we had the collapse of the sewer, which accounted for $57,987.24 during that year. The increase in the Casualty Insurance Reserve of 1923 over 1922, leaving out the charges on account of the sewer, as you refer to is $15,844.91, not $30,000. In other words, our expenditure increased in 1922 by reason of the collapse of the sewer. There was an increase in 1923 over 1920 and 1921. There is an account set up each year according to a resolution to be credited to Casualty Insurance Reserve, against which charges are made in connection with [fol. 1275] injuries to employees and other personal injuries and property damages. That is a public liability and we carry that ourselves; we do not take out public liability insurance. We do however, insure against damage caused by our automobiles. The rest of it we insure ourselves by setting up $100,000 each year. In 1921 we had a bal-*ance* on hand unexpended of $428,524.27. I called that figure off, I believe and in 1922 we exceeded the $100,000 set apart, largely due to the collapse of this sewer at the Citizens Works. At the close of 1923 our balance accumulated in this account unexpended was $413,192.61. The men that do work in the Construction Department, or any construction work, are covered by this policy, that is, covered by this insurance. We have no insurance during construction other than the reserve. We charge that all into operating and allocate none of it to our fixed capital. We do not allocate any of the actual losses to our fixed capital. Now, when I say that no part of that reserve is allocated to capital account, as the losses occur in the process of construction, no part of those losses are carried over into the Capital Account, losses against that reserve. There is an insurance record in the vice-president's office, but not in my office. He keeps all that. And we insure the Newtown gas [fol. 1276] holder; All of our property is insured so far as I know. This gas holder belongs to the Newtown Gas Com-

pany. It is called Holder No. 2; and we insure that. That is part of our fire insurance; and that is done pursuant to some lease.

If the new business department does any work specifically for the subsidiaries, it is so charged to them through the medium of the payroll charge sheets or the material supply reports. They might do some work in the New Business Department office that is absolutely for the Newtown Company, for example—well take in compiling, maybe, some sales reports, for example—Supposing I send down to the New Business Office and ask for some data relative to the subsidiary companies. They would take a clerk off and he does nothing but that, the compiling of some information, and they would charge that directly to the Newtown Company. It is the same as if I would ask the Newtown Gas Company to do it.

My attention was called the other day to the increase in advertising from $5,000 to about $24,000, 1923 over 1922; and I stated that it was almost due entirely to the advertising of gas appliances. No part of that expenditure is allocated to the subsidiary companies; and there is no part of this amount that is spent for demonstration of the appliances that is allocated to that, not the demonstrations as [fol. 1277] performed by the Brooklyn Union Company, even though it should demonstrate to a purchaser who lives in one of their territories, we would bear that charge. We store these appliances at 1024 Fulton Street. That building is not allocated in any way to the subsidiaries. We maintain that building ourselves. All the appliances are stored in 1024 Fulton Street, no matter who they are for. The price which we charge the subsidiaries does not contain any differential to cover such items as this storage that Mr. Cummings has spoken of or any other items. Cartage or delivery charges or anything else in the way of expenses that has been borne by the Brooklyn Union Gas Company, in addition to the purchase price which the Brooklyn Union Company paid for the appliance itself. We charge them simply what we pay for the appliance.

There is no allocation of the automobile expense. We have a garage at Third Avenue and Third Street where we store them. I think we rent it. We pay the entire rental of the garage—the Brooklyn Union Company does;

and we also pay insurance on our cars; we pay that, the Brooklyn Union Gas Company, the entire expense of it.

In making the price which the subsidiaries pay the Brooklyn Union Gas Company for gas, any one of those things that we are talking about are not taken into consideration [fol. 1278] and added to the cost of manufacturing the gas itself, for the purpose of including in the amount paid by the subsidiaries to the Brooklyn Union Company some appropriate allowance for these various items or any of them. And we also bear the entire expense of the cost of operating, that is, the gasoline used and the repairs necessarily made to the machines. And they are used by the general officers of the company. These machines owned by the Brooklyn Union Company are used by the general officers in their tour of the districts of the subsidiaries and are also used in the work performed for the subsidiaries. When Mr. White goes out to see or to inspect the work that is being done in the subsidiaries, he uses the automobile of the Brooklyn Union Gas Company. Mr. White's time is allocated between the two, but the automobile that he rides in is not. We have some large trucks among our automobiles, particularly for the purpose of repairs to the distribution system. And whenever they make an addition or an extension to their mains, these gangs use these trucks to carry the materials. We have been making more extensions in the territory of our subsidiaries than we have in the Brooklyn Union territory itself. If the material is taken from the storeyard in the Brooklyn Union Company, the hauling charge is charged to the company which the [fol. 1279] work is being done for. That includes only the wages of the chauffeur. It does not include the cost of operating the truck; nothing other than the wages of the chauffeur. The New Business Department has a couple of cars assigned to them. They really have two chauffeurs now. They drive the commercial wagons connected with the New Business Department, that is delivering these appliances, and they deliver appliances in the territory of the subsidiaries as well. They might occasionally. I don't think it is a regular thing. Delivery from 1024 Fulton Street to the territory of the subsidiaries is done by a truck of the Brooklyn Union Company. It is not done by those two particular trucks; but which ever truck de-

livers them, no charge is made to the subsidiaries for that. And if we should deliver a stove to a consumer in the Newtown District, no charge is made for delivering that stove. The reason there was a large increase in our stable and automobile expenses over 1922 was that we had more motor vehicles in 1923 than in 1922. I would not say very many more because I don't know the number. I think, as a matter of fact, it is more than one or two. That would not explain this difference of about $50,000, but it all depends on how many additional motor vehicles we had.

[fol. 1280] That is all, the increase in the number of vehicles. I have no other explanation to offer. That is, I say the additional vehicles, together with the expenses in connection with them. I do not drive a car.

The undistributed adjustments represents cash discounts on bills and inventory adjustments.

"Other rent deductions," that represents charges for properties which we rent. We have a sub-branch on Myrtle Avenue, we have a sub-branch on Court Street, we have a sub-branch on Fourth Avenue. We rent three branches and a garage. Rent expense, that is expenses incident to the maintaining of some tenement property that the company owns at York and Gold Streets. The revenue is derived from the rental of those places and is included in Miscellaneous Rent Revenues. And that is not shown on my schedule. We are putting in the expense but not giving the rental. That is not in my schedule at all. Just the expense is there. They are tenement houses. I could not say offhand whether the revenue does equal the expense. I have not the figure in mind. When the revenue comes in, it goes to the Miscellaneous Rent Revenues Account. This item of expense goes into Operating expenses. Rent expense is the account. The revenue from these rentals is not in my schedule.

Joint Operating Expenses, a debit there amounting to [fol. 1281] $56,000, is expenses in connection with the joint use of the Brooklyn Union Gas Company with the Newton and Flatbush Companies for the pumping station and transmission main facilities. They charge us for the use of those things. The $56,000 dollar item is a figure based on a resolution of the Board of Directors. I do not know whether you want this. My recollection is that that is

a resolution of the Newtown Board. The joint operating expenses credit, amounting to $457,591.43 in 1922, and $541,679.25 in 1923. That is a credit to the operating expenses of the Brooklyn Union Gas Company on account of services performed for them in the gas that is purchased. Those are the charges that are made to the subsidiaries for this so-called blanket allocation. The company charges the subsidiaries the actual cost of making the gas and then the Newtown and Flatbush Companies are charged over and above the cost of making gas the sum of 21 cents per M and the Fourth Ward Companies are charged 26 cents. This 21 cents was arrived at by a computation made under my supervision. All right, I will offer the original letter.

(Letter to be marked Defendant's Exhibit 33, when produced.)

Mr. Blanchfield, in his letter, states that prior to 1920 the Brooklyn Union Gas Company charged its subsidiary companies a flat rate per thousand cubic feet of gas sold and service.

[fol. 1282] Mr. Cummings: I offer in evidence the whole resolution of July 28th, 1921.

The Master: What company?

Mr. Cummings: Of the Brooklyn Union Company, the resolution of the Board of Directors.

"Resolved, that the resolutions adopted by the Board at meeting held December 23, 1919, relative to the charge for gas to the subsidiary companies be and the same — hereby rescinded:

"And be it further

"Resolved that beginning with the month of July, 1921, the charge for gas sold to the Flatbush Gas Company and Newtown Gas Company shall be based on the cost of manufacture to the Brooklyn Union Gas Company, plus transmission pumping, plus a charge of 16 cents per thousand cubic feet covering a return on the estimated investment of the Brooklyn Union Gas Company devoted to manufacturing and delivering gas to these companies, taxes, reserve for renewals and replacements, and contingencies and miscellaneous general expenses, the percentage of unaccounted for gas computed each month for the Brooklyn

Union System will be used in determining the quantity of gas delivered to the respective companies;

"And be it further

"Resolved that beginning with the month of July, 1921, the charge for gas sold to the Jamaica Gas Light Company, [fol. 1283] the Woodhaven Gas Light Company and the Richmond Hill and Queens County Gas Light Company shall be based on the cost of manufacture to the Brooklyn Union Gas Company, plus transmission pumping, plus a charge of 21 cents per thousand cubic feet covering a return on the estimated investment of the Brooklyn Union Gas Company devoted to manufacturing, storing, and delivering gas to those companies, taxes, reserve for renewals and replacements and contingencies and miscellaneous general expenses. The percentage of unaccounted for gas computed each month for the Brooklyn Union System will be used in determin-g the quantity of gas delivered to respective companies.

"There being no further business, it was, upon motion, voted to adjourn."

I offer in evidence a resolution of February 14, 1922, of the Brooklyn Union Gas Company Board of Directors.

The Master: That will be admitted.

Mr. Cummings: I will read it instead of having it marked (reading):

"Present, Messrs. D. G. Legget, William G. Rockefeller, James H. Jourdan, R. L. Pierrepont, Wm. R. Coe.

"Resolved that the resolutions adopted by the Board at meeting held July 28th, 1921, relative to the charge for gas [fol. 1284] sold to the subsidiary companies be and the same are hereby rescinded;

"And be it further

"Resolved that beginning with the month of January, 1922, and until further notice, the charge for gas sold to the Flatbush Gas Company and the Newton Gas Company shall be based on the cost of manufacture to the Brooklyn Union Gas Company plus transmission pumping, plus a charge of 21 cents a thousand cubic feet covering a return on the estimated investment of the Brooklyn Union Gas Company devoted to manufacturing and delivering gas to

these companies, taxes, reserve for renewals and replacements and contingencies and miscellaneous general expenses. The percentage of unaccounted for gas computed each month for the Brooklyn Union System will be used in determining the quantity of gas delivered to the respective companies;

"And be it further

"Resolved that beginning with the month of January, 1922, and until further notice, the charge for gas sold to the Jamaica Gas Light Company, the Woodhaven Gas Light Company and the Richmond Hill and Queens County Gas Light Company shall be based on the cost of manufacture to the Brooklyn Union Gas Company plus trans- [fol. 1285] mission pumping, plus a charge of 26 cents per thousand cubic feet covering a return on the estimated investment of the Brooklyn Union Gas Company, devoted to manufacturing, storing and delivering gas to these companies, taxes, reserve for renewals and replacements and contingencies and miscellaneous general expenses. The percentage of unaccounted for gas computed each month for the Brooklyn Union system will be used in determining the quantity of gas delivered to these respective companies."

I understand there isn't a resolution following this, so I can't produce it.

Those charges are the same plan in vogue today. I have made computations for this year, 1924. I have not yet made a recommendation to the Board of Directors for the year 1924. I have not the figures with me, showing the more recent computation for 1924. I think, probably, that was made up some time in February. It was practically finished in February. I am going to make some sort of recommendation to the Board of Directors as to the proper charges to make to the subsidiaries for the remainder of this year. I haven't got my letter off yet. This 21 cents is divided into four items, Administration, Taxes, Renewals & Replacements and Return on Capital. There was a cer- [fol. 1286] tain amount arrived at to charge for the administration items, and a certain amount arrived at for the items pertaining to taxes and also for renewals and replacements; and then there was also a certain number of cents which I thought it would be advisable for return on

capital. The total of those four items made the 21 cents for Newtown and 21 cents for Flatbush and 26 cents for the Fourth Ward Companies.

This figure called to my attention for general operating expenses credited, that is based upon a computation of an intricate nature made by Mr. Blanchefield and I would prefer to have him explain and testify regarding it.

Repairs of general structures, that represents the expenses incident to repairing the general structures of the company, outside of the manufacturing plants, That includes repairs of this 1024 Fulton Street, the warehouse and also 130 Atlantic Avenue and the two buildings here on Remsen Street and others. No part of that expense is allocated to the subsidiaries. We have lease of other gas plants, amounting to $92,800. That is for the lease of a Newtown holder known as Newtown holder No. 2. * * *

[fol. 1287] Mr. Cummings: Now, I believe I will offer in evidence the resolution of the Board of Directors on September 2nd 1920, of the Brooklyn Union Gas Company (reading):

"Present: Messrs. William Rockefeller, D. G. Legget, E. R. Chapman, James J. Jourdan.

[fol. 1288] "The president in the chair.

"The president then stated that the Newtown Gas Company had negotiated with Bartlett-Hayward Company for the construction of a gas holder upon its property with a capacity of 10,000,000 cubic feet at a total cost of approximately $1,000,000 and that a gas holder of 10,000,000 cubic feet was far beyond the present requirements of the Newtown Gas Company; that the proposed contract for the construction of said holder by the Bartlett-Hayward Company could not be made unless the Brooklyn Union Gas Company guaranteed performance of the contract by the Newtown Gas Company; that in his judgment the facilities afforded by a gas holder having a capacity of 10,000,000 cubic feet were required by the Brooklyn Union Gas Company; that it had been proposed that the Newtown Gas Company contract with the Bartlett-Hayward Company for the construction of the holder; that the Brooklyn Union Company guaranteed payment of the contract price; and

that the Brooklyn Union Gas Company agree with the Newtown Gas Company to lease the holder when completed for a term of years at an annual rental equivalent to 8 per cent annually of the cost price of the holder to the Newtown Gas Company, plus taxes, maintainance, and all [fol. 1289] expenses of operation.

"The president also stated that a contract for the construction of this gas holder had been drafted; that the form thereof was satisfactory to the Bartlett-Hayward Company and counsel for the gas company, and that the terms in his judgment were advantageous both to the Newtown Gas Company and the Brooklyn Union Gas Company."

Mr. J. A. Dykman: Let us mark this Defendants' Exhibit 34.

The Master: Beginning with the words, "The president then stated that the Newtown Gas Company had negotiated with Bartlett-Hayward Company" and so forth, on page 29, and taking in the balance of page 29, all of 30, and all of page 31.

(Portion of minutes referred to marked Defendants' Exhibit No. 34.)

(Lease marked Defendants' Exhibit No. 35.)

This Charge of $92,800 for rent for lease of other gas plant is a charge made pursuant to this lease which you show me, marked Defendants' Exhibit 35, made between the Brooklyn Union Company and the Newtown Company, covering what is known as Holder No. 2. It covers the period from the time of its making on the 15th day of February, 1922 for a period of ten years subsequent to that date. And this charge of $92,000 is an annual charge under [fol. 1290] that lease. This holder was constructed by the Bartlett-Hayward Company for the Newtown Gas Company. But the Newtown Gas Company did not have the money or the credit with which to pay for the holder, and the Brooklyn Union Company guaranteed the payment to the Bartlett-Hayward Company for that holder. I do not recall that they loaned them any money to pay for the building of the holder. Now, after the holder was completed, the Brooklyn Union Company leased the holder from the Newtown Gas Company, paying 8 per cent. return upon the

cost of the holder, together with taxes and maintainance and operating expense for a period of ten years. The bills of the Bartlett-Hayward Company as they were presented were paid, I think, by the Brooklyn Union Company. The amount of money that the Brooklyn Union Company paid for the holder became part of the outstanding indebtedness from the Newtown to the Brooklyn Union. It only increased that indebtedness. The interest is charged on the open account of the Newtown Company at the end of each month at 6 per cent. The subsidiary companies have always, within recent years, owed the Brooklyn Union Company money. The Flatbush, I believe, is the largest amount that is owed.

[fol. 1291] I am reading from the annual report to the Public Service Commission for the year ended December 31st, 1922 of the Brooklyn Union Gas Company. I am using it to refresh my recollection as to the amount that the subsidiary companies owe us. At the end of 1922 the Newtown Company owed the Brooklyn Union Gas Company $586,667.21; The Richmond Hill Gas Company $35,330.78; the Jamaica Company, $219,916.12; the Woodhaven Company, $197,887.90; the Flatbush Company $2,746,066.37, making a total of $3,785,868.38. So this money that was advanced for this holder only served to increase the indebtedness of the subsidiaries to the Brooklyn Union. The Brooklyn Union not only then forwarded the money to construct the holder, extended their credit to the Newtown Gas Company, but after it was constructed, they then made this lease of ten years in which the rental is based upon 8 per cent return upon the cost, together with the maintainance and the cost of operating the holder; that is that right, in other words the Brooklyn Union Company paid for everything except the land upon which the holder stood. Throughout the period that the Brooklyn Union Company is paying 8 per cent. on the value of the holder they in re-

[fol. 1292] turn are getting 6 per cent. return upon the money they advance. The Newtown Company's indebtedness to the Brooklyn Union Company, I think, is somewhat smaller now than it used to be, being reduced. Now this holder is used for the Newtown Gas Company too. Gas goes into the holder which serves their consumer's need. No-

body knows where the gas does go. No part of the rental of the holder is allocated to the Newtown Company, that is, the Brooklyn Union Company pays the entire carrying charge for that; and no part of it is allocated to any other of the subsidiaries.

The Joint Facility Rents is the proportion of the joint operating charge relating to the holder and the pumping stations of the Newtown and Flatbush Companies, that is, Newtown Holder No. 1, and the Flatbush Holder, of which the Brooklyn Union Company is a joint operator. The one that I have just mentioned is known as Holder No. 2. And they have an older holder, one that has been erected for some years, known as Holder No. 1. This charge of $68,000 is made according to a resolution, and the charge so fixed is based upon an engineering standpoint in arriving at this amount to be charged each month, of which part is joint operating expenses, and the other part is the joint [fol. 1293] facility rents. That is the Newtown Gas Company charges for the use of that holder $6,850 per month. That is, for the joint use of holder No. 1, the pumping station and the transmission main facilities owned by the Newtown Gas Company. Holder No. 1 was not built under the same circumstances as this holder, that is, the Brooklyn Union Company did not meet the bills for the construction of that holder, and then subsequently make a lease with the Newtown Company. They built that holder with the use of their own money. Holder No. 1 was just a joint operation between the Newtown Company and the Brooklyn Union Company.

The general amortization charge which appears on my account, I mean exhibit, 1-1/2 cents per M. is a charge that has been made since 1909 and is still being made. In 1922 and 1923 it is based on a resolution of the Board of Directors and requires that a cent and a half per thousand cubic feet of gas sold to general consumers be charged to general amortization each month. It covers renewals and replacements. One and a half cents per thousand cubic feet. And that is an amortization of our physical plant. We carry an accrued amortization of capital also. Accrued amortization of capital is the liability reserve. We have [fol. 1294] one amortization account but it is split in two parts, debit and credit. The debit goes to the expense ac-

count called General Amortization and the credit is the Liability Reserve which is accrued amortization of capital. The capital amortization is 1-1 2 cents. It is Liability Reserve. The operating account is general amortization. That is a cent and a half on sales to general consumers each month. That is debited to this account General Amortization. The contrary account is Accrued Amortization of Capital. That is the same cent and a half. The entry reads, General Amortization, debited to Accrued Amortization of Capital. You have the two sides of the account, then the debit and the credit. They each represent a cent and a half on sales to general consumers each month. They are posted at the same time. You see, this is a double entry. We must have a charge for every credit, and the charge is general amortization, which is an expense, and the credit is the reserve account, for accrued amortization of capital. In 1907, there was a resolution passed, setting up a reserve for depreciation and contingencies. That amortization account was opened in 1909 to conform with the uniform system.

Mr. Cummings: I offer in evidence the Minutes of a regular monthly meeting of the Board of Directors of the Brook-
[fol. 1295] lyn Union Gas Company, held Thursday in 19th day of September, 1907, at 2:30 o'clock P. M. Present: Messrs. D. G. Legget, Wm. G. Rockefeller, William Rockefelier and James Jourdan, and, by invitation, Mr. William M. Dykman, counsel, and Mr. A. F. Staniford, assistant treasurer and auditor. The President in the chair.

The Master: Those minutes were previously offered and objection was made; the objection is overruled and the minutes are admitted and may be marked in evidence.

(Received in evidence and marked Defendants' Exhibit No. 36.)

Mr. Cummings (reading): "The president reported the expenditures made during the fiscal year, ending June 30, 1907, for renewals, replacements and extensions, to have been approximately $750,000. After discussing it was resolved that for the purpose of reserve for depreciation and for contingencies, amounts be credited to depreciation account and debited to surplus account and profit and loss

account, calculated at the rate of 10 cents per thousand cubic feet of gas sold, from July 1st, 1906 to June 30, 1907, inclusive."

From June 1st, 1906, we carried an account called [fol. 1296] Depreciation, which covered depreciation and contingencies. We made certain withdrawals from it, certain credits to it. The withdrawals of mains, meters and services were credited to this account and that is all. That is all the withdrawals that were credited to that account. From July, 1906, to June 30, 1907, there were no withdrawals or credits to that account. There were no withdrawals from December 31, 1907, to December 31, 1908 of any kind or nature. Withdrawals would appear in the form of credits to the account, credits to the fixed capital account and debits to this account. They were mains, meters, services, and plant. The title of the account was "Depreciation and Contingencies." That is the name of the account. I do not know what portion of the account related to depreciation and what portion related to contingencies. The title of the account is "Depreciation and Contingencies," and any property of the company that is withdrawn is a debit to that account. All of the property retired or withdrawn in the company we term "withdrawals" and the word or part "contingencies" does not enter into it. There is no such thing as an entry in this account as a contingency. The reserve is entitled "Depreciation and Contingencies." No matter what is was en- [fol. 1297] titled; there was nothing entered in it except withdrawals. Regardless of the title and regardless of the purposes as shown by the resolution, all that was taken out of it was withdrawals for street mains and services and plant and meters. On July 1st, 1917 the balance in the account was $1,603,232.68. On January 1st, 1909 we opened a new account called "Accrued Amortization of Capital." That was when the uniform system of accounts came into effect.

Mr. Cummings: I offer in evidence the minutes of a special meeting of the Board of Directors of the Brooklyn Gas Company, held on Tuesday the 13th of April, 1909, at 2:30 p. m. (reading):

"Present: Messrs. William Rockefeller, H. H. Rogers, D. G. Legget, E. R. Chapman, James Jourdan, and, by invitation, Mr. William N. Dykman, counsel.

"The president in the chair.

"Upon motion duly seconded it was

"Resolved, that commencing from January 1st, 1909 the officers be and they hereby are authorized and directed to charge each month as part of the operating expenses of this company an amount equal to ten cents per thousand cubic — of gas sold each month to cover deterioration, renewals, extraordinary wear and tear, obsolescence, inadequacy, replacements, extraordinary casualties, contingencies, and to cover also, if any such moneys remain, minor extensions and additions. No charges against the said account or [fol. 1298] appropriation of the fund so established shall be made except by the authority of the Directors."

The Master: That is received subject to the general objection and exception noted by Colonel Dykman, and is marked in evidence.

(Resolution read by Mr. Cummings marked Defendants' Exhibit No. 37.)

This new account mentioned in the resolution of April 13th, 1909 covered contingencies. It also covered extraordinary casaualties. From 1895 to December 31st, 1908 the title of the account was "Depreciation." From 1895 to December 31st, 1906 the withdrawals of mains, meters and services were charged to this depreciation account. At the end of each year these withdrawals were credited to profit and loss. From July, 1906 to December 31st, 1908, according to a resolution, ten cents per thousand on the gas sold was credited to this Depreciation Account. No withdrawals were charged against this account in that period. From 1909 to 1916 an account was opened called "Depreciation and Contingencies." From 1895 to 1906 the account "Depreciation" was closed out each year—at the end of each year. When the resolution of 1907 was set up, [fol. 1299] there was no balance in the account Depreciation. From 1895 to 1906 the account Depreciation was closed out at the end of each year. Then on December 31st, 1906, that account that I have just referred to was closed

out. So this resolution started to put credits to that account on January 1st, 1907. So the resolution put credits to that account, representing ten cents a thousand cubic feet of gas sold from July, 1906 to December 31st, 1906. And that was a retroactive for six months. Also from January 1st, 1907 to December 31st, 1907, and from January 1st, 1908 to June 30th, 1908 and from July, 1908 to December 31st, 1908. So that at the end of December 31st, 1908 there was a credit balance in the account called Depreciation—a certain figure. Now, from 1909 which is the date of the Uniform System of Accounts—the account was changed to read "Depreciation and Contingencies," on January 1st, 1909. Prior to that it had been called just "Depreciation." On January 1st, 1909, the title of the account was changed from the simple word "Depreciation" to the words "Depreciation and Contingencies." And the balance brought forward to this new account was $2,382,928.61. And that amount was used to open a new account, "Depreciation and Contingencies," January 1st, 1909, thus closing out the account of Depreciation as of December [fol. 1300] 31st, 1908. From 1909 credits to this account were made on account of the withdrawal of mains, services and plant. Leaving the balance of Depreciation and Contingencies, December 31, 1910 $1,603,232.68. From January 1st, 1917 up to and including June 30th, 1917 there was a certain amount of withdrawals of mains, meters, services and plant. Let me see, I am ahead of my story.

The Master: You have omitted to tell us what change in the account took place January 1st, 1917. The last thing that you have given me is the condition of the account December 31st, 1916, and I assume some change took place January 1st, 1917.

A. It was retroactive to January 1st. The resolution was made in June, 1917 and we worked back to the first of the year, which was retroactive as of January 1st, 1917; June 30th, 1917, a change was made. In June, 1917, according to the resolution of the Board of Directors a new account was opened up entitled "Contingencies." On January 1st, 1909 we opened a new account called Accrued Amortization of Capital as shown in this resolution which was just called to my attention. The account called Depreciation and Con-

tingencies covered contingencies. We had two accounts covering contingencies, one "Depreciation and Contin- [fol. 1301] gencies," the other called "Accrued Amortization of Capital." The title of the account was changed, but the items that went into it were the same. As far as I know, the purposes of the account called "Depreciation" and then later called "Depreciation and Contingencies" were the same. On January 1st, 1909 there was opened up an account called Depreciation and Contingencies and an account called Accrued Amortization of Capital. The account Accrued Amortization of Capital was carried according to a resolution of the Board of Directors with fifteen cents per thousand cubic feet of gas sold, less repairs, and this account Accrued Amortization of Capital together with the account "Depreciation and Contingencies," was debited with the amount of withdrawals covering mains, meters, services and plant. And that condition of our accounts existed up to December 31st, 1916. A resolution was then passed by the Board of Directors opening an account called "Contingencies."

Mr. Cummings: I will offer that resolution in evidence right now (reading):

"A special meeting of the Board of Directors of the Brooklyn Union Gas Company was held on Thursday, [fol. 1302] August 9th, 1922, at 12:30 o'clock p. m.

Present: Wm. G. Rockefeller, D. G. Legget, E. R. Chapman, and James M. Jourdan.

"The president in the chair.

"The minutes of the regular meeting held July 9th, 1917 were read and upon motion approved.

"The call for this meeting was for the purpose of discussing the subject as set forth in the following statement of the president: The president stated that the practice of including in the account "Accrued Amortization of Capital, the provision made for contingencies is liable to misinterpretaton, that the form of annual report prescribed by the Commission erroneously provides for deducting from the company's assets of the balance shown in this account, that it is the common practice of counsel for the Commission and other members of the Commission's staff to refer to the balance in the accrued Amortization of Capital Ac-

count (1) as accrued depreciation, and (2) as the measure of the impairment of the company's investment, which has occur-ed during the period of its accumulation; that the provision for contingencies has no relation whatever to the company's assets except as it shows an intent on the part of the company to protect the investment therein by making provision out of the earnings for such contingencies or [fol. 1303] casualties as those caused by fire, flood, earthquake, insurrection, or rior or any other hazards; that the amount credited annually to the accrued amortization of capital account, other than such sums as have been estimated to be necessary to amortize capital invested in plant withdrawn from service, represents the company's provision for contingencies, and in order to avoid any misunderstanding or ambiguity in relation thereto, the President recommended that the balance of the Accrued Amortization of Capital Account representing the provision for contingencies be transferred to an account to be entitled 'contingencies.'

"Upon motion duly seconded, it was

"Resolved, that the officers be and they hereby are directed to transfer to an account to be designated as Contingencies (1) the balance in the Accrued Amortization of Capital Account as of January 1st, 1916, representing the provision for Contingencies up to and including that date, (2) the balance in the Accrued Amortization of Capital account computed at 8 cents per thousand cubic feet of gas sold in 1916, representing the provision for contingencies in that year, and (3) the balance in the Depreciation and Contingencies account as of January 1st, 1917; that beginning as of January 1st, 1917, and for each month thereafter, they shall be credited to contingencies and charged [fol. 1304] to net earnings an amount equal to 6½ cents per thousand cubic feet of gas sold to general consumers in said month, for the purpose of providing for contingencies or casualties such as those caused by fire, flood, earthquake, insurrection or riot, or any other hazards; that no charge against the said contingencies account or any appropriations therefrom shall be made except by authority of the Board of Directors or the Executive Committee.

"On motion duly seconded it was

"Resolved, that the officers of this company be and they are hereby authorized and directed to charge each month

after January 1st, 1917, as a part of the operating expenses of this company, under the designation of General Amortization a sum equal to one and one half cents per thousand cubic feet of gas sold to general consumers during said months for the amortization of capital invested in plant withdrawn from service (Due to normal causes, obsolescence, inadequacy, or changes made in conformity with discoveries or improvements in the methods of producing or distributing gas), the same to be credited to Accrued Amortization of Capital account, no charge against the latter account or any appropriations therefrom to be made except by authority of the Board of Directors or the Executive Committee."

[fol. 1305] The Master: Yes, Mr. Dykman's objection and exception apply to this exhibit and it is received in evidence over that objection and exception.

(Resolutions read by Mr. Cummings marked Defendants' Exhibit No. 38.)

The balance in the accrued amortization of Capital Account at that time was $10,401,014 and from that balance $10,138,046.78 was taken and placed to the New Contingency Account. Leaving the Accrued Amortization of Capital $262,967.22; now that $10,138,046.78 represented the provision in that account which had been made for contingencies. From the Account of Depreciation and Contingencies, the balance was $1,603,232.68, and they also transferred that to the New Contingency Account. That closed out the Depreciation and Contingencies Account. And then the new account called Contingencies which was opened pursuant to this resolution was opened at $11,741,279.46, as provided by the resolution; a sum equal to 6 1/2 cents per thousand cubic feet of gas sold to general consumers was added to the account in 1917. That resulted in adding $848,696.67 to the account. The total then was $12,589,976.13. For every month since 1917 there has been an amount equal to 6 and 1/2 cents on the amount of sales to general consumers credited to this account and that same figure closed out at the end of the year, leaving the [fol. 1306] balance of contingencies the same as of December 31st, 1917, credited and debited at the same time. We have made no credits or taken anything from this account

for fire at any time, nor flood, nor earthquake, nor insurrection, nor riot, nor any other hazards. We have never credited any of our accounts which have been a reserve for contingency with any charge for a contingency of any kind. My knowledge of the purpose of the account is limited to this resolution. I don't know who would know more about the purposes of the account, perhaps some me-ber of the Board of Directors. I guess you would have to take the entire board; probably they would differ. When we transferred this account from Accrued Amortization and opened up the new account contingencies; we had considerable correspond*a*nce with the Public Service Commission in relation to the handling of that account. It did not come to my attention.

Mr. Cummings: I offer in evidence a letter of the Public Service Commission under date of June 21st, 1917 to the Brooklyn Union Gas Company, James Gilmer, Esq., Auditor, 176 Remsen Street, Brooklyn, New York.

(Received in evidence and marked Defendant's Exhibit No. 39.)

Mr. Cummings (reading): "Your report for the year ended December 31, 1916, is defective, inconsistent, or ob- [fol. 1307] scure in the following particulars. Please submit the necessary corrections and explanations." * * *

"Page 51, line 22. From the note explaining these entries and from the 'amortization' rule filed with the Commission, it appears that the respondent includes in its charge the operating expense account General Amortization (842) 'Contingencies' and provision for 'Minor Extensions and Additions.' The inclusion of such elements in operating expenses is contrary to the provisions of the Accounting Order.

"At request of yours, dated May 15, 1916, these questions were held in abeyance pending conferences to be held. These conferences resulted in no change in the accounting order as regards the above. Kindly authorize the appropriate corrections."

Mr. Cummings: Now I offer in evidence a letter of September 27, 1917 from the Brooklyn Union Gas Company to the Public Service Commission for the First District, signed

by Henry A. McGowan, Secretary, with no initials in the lefthand corner.

Mr. Cummings (reading): "The Board of Directors in order to avoid any misunderstanding in relation to the provision which the company has made (a) for the amortiza-[fol. 1308] tion of capital, invested in plant withdrawn from services and (b) for such contingencies or casualties as these caused by fire, flood, earthquake, insurrection, or riot or any other hazard, have adopted a resolution, providing for a provision, or rather a division, between the provision for amortization and the provision for contingencies.

"The effect of this resolution upon the report for the calendar year 1916 has been to divide the provision for that year for the purposes named, viz: $1,503,148.62 as follows: For contingencies $1,192,360.21 and for accrued amortization of capital $310,788.41 less $47,821.19, representing the amortization of capital invested in plant withdrawal from service during the year and charged to this account, leaving a balance as of December 31, 1916 of $262,-967.22.

"Similar resolutions have been adopted by the Board of Directors of the following companies:

"The Flatbush Gas Company,

"The Newton Gas Company,

"The Jamaica Gas Light Company,

"Richmond Hill and Queens County Gas Light Company."

"For the Commission's information we enclose a record of the minutes of the meeting of the Board of Directors [fol. 1309] held August 9, 1917, concerning a statement by the President and resolutions adopted by the directors.

"The correction of the company's report to the commis-in plant withdrawn from service, amounting as of December 31st, 1916 as above stated, to $262,967.22, having no relation to the company's investment in plant and property (except as it is designed for the amortization of the investment therein as and when it is withdrawn from service) should not be reported on page 18, line 34, but should appear as a credit item in the company's balance sheet.

"The amount, transferred to 'Contingencies' in accordance with the foregoing resolution, as of December 31, 1916, was $11,741,279.46.

"The correction of the company's report to the commission covering the calendar year 1916, in accordance with the foregoing is hereby authorized."

(Received in evidence and marked Defendant's Exhibit No. 40.)

Mr. Cummings: I introduce in evidence copy of letter dated October 9, 1917, from the Public Service Commission to the Brooklyn Union Gas Company, Henry E. McGowan, Esq., Secretary, 176 Remsen Street, Brooklyn, New York.

The Master: The same objection and exception. It may be marked.

[fol. 1310] (Received in evidence and marked Defendants' Exhibit No. 41.)

Mr. Cummings (reading):

"Dear Sir: Your letter dated September 27, 1917 relative to provision for amortization and contingencies, has been received. The changes that you request to be made in your 1916 annual report for 1916 will not be made for the reason that they are contrary to the provisions of the Uniform System of Accounts for gas corporations. According to the text of the account Accrued Amortization of Capital (page 28), charges are made to that account when any capital is retired from service and at no other time. The entries that you propose to make are contrary to the explicit provisions of the order and the officer who makes them will be held responsible.

"Yours very truly, James B. Walker, Secretary.

"A. F. W.—L. E. R."

Now, I offer in evidence a letter by the Commission under date of June 12, 1918——

The Master: A letter by the Commission?

Mr. Cummings: By the Public Service Commission, under date of June 12, 1918.

The Master: The same objection, exception, and ruling.

(Received in evidence and marked Defendants' Exhibit [fol. 1311] (Received in evidence and marked Defendants' Exhibit No. 42.)

Mr. Cummings (reading):

"To the Brooklyn Union Gas Company, James Gilmer, Esq., Auditor, 176 Remsen Street, Brooklyn, New York.

"DEAR SIR: Your report for the year ended December 31, 1917 is defective, inconsistent or obscure in the following particulars. Will you submit the necessary corrections and explanations within twenty days. If information is not then ready with respect to any matter requiring extended research; please state when such information can be furnished." * * *

"Page 49, line 15: The company's reserve Accrued Amortization of Capital was accumulated by charges to operating expenses under its rule concerning amortization filed pursuant to the requirements of the Uniform System of Accounts. As no charges may be made to this account except as provided by the accounting order, the balance therein must be restored and charges made to operating expenses in accordance with the rule, except that as heretofore stated the inclusion of such elements as 'Contingencies' and provision for minor extensions and additions are contrary to the provisions of the accounting order."

"Yours very truly, **James B. Walker, Secretary.**

"A. F. W.—L. E. R."

[fol. 1312] Now I will ask the stenographer to copy into the record the letter from Mr. Staniford on August 16, 1918.

The Master: The same objection, exception and ruling.

(Received in evidence and marked Defendants' Exhibit No. 43, and is as follows:)

"August 16, 1918.

"Mr. James B. Walker, Secretary the Public Service Commission for the First District, 47 Lafayette Street, New York, N. Y.

"DEAR SIR: Replying further to your letter of June 12, 1918, relative to our annual report for the year ending December 31, 1917, we beg to state as follows:

"Page 18, line 34: Reference is made to our letter to the Commission dated September 27, 1917. As stated therein, the provision for the amortization of capital invested in plant withdrawn from service having no relation to the

company's investment in plant and property (except as it is designed for the amortization of the investment therein [fol. 1313] as and when it is withdrawn from service), does not diminish the company's investment and, therefore, should not be reported on page 18, line 34, but should appear as a credit item on the company's balance sheet. The balance in the account carrying this provision, amounting as of December 31, 1917 to $348,834.77 is in accordance with the rule adopted by the company and reported to the Commission in the letter above referred to.

"In this connection we wish to protest against the misrepresentation of the book value of this company's assets contained in a statement of the 'Assets and Liabilities of Light, Heat, and Power Companies, December 31, 1917, published by the Commission's statistical department and alleged to be 'Compiled from reports to the Public Service Commission.' In this statement there is deducted from the assets of the compiled from reports to the Public Service Commission.' In this statement there is deducted from the assets of the company, as shown by its books and as reported to the commission, the aggregate of the amounts shown to the credit of the account 'Accrued Amortization of Capital' ($348,834.77) and the account 'Contingencies' ($12,589,976.13). By this means the book value of the company's assets has been made to appear to be impaired to the extent that the company has made provision for the amortization of capital [fol. 1314] invested in plant withdrawn from service as well as to the extent that it has made provisions against such contingencies or casualities as those caused by fire, flood, earthquake, insurrection or riot or any other hazards. There has been no such impairment, nor any other impairment, nor is there any provision in the Public Service Commission law, nor in the accounting system, prescribed by the commission which warrants such distortion of the company's report to the commission.

It is immaterial by what bookkeeping means the reserves were created and there is no justification in fact or in law for their being deemed a measurement of impairment of the company's investment. The reserves were created out of a rate prescribed by the Act of the Legislature and represented a segregation of the earnings under such rate for the company's own interest and protection.

"As repeatedly stated to the Commission in previous correspondence, the company has never made any provision for the amortization or I mean socalled 'Depreciation' nor any provision for the amortization of capital other than the capital invested in plant which has been withdrawn from service. This being the case, the Commission is to [fol. 1315] correct its published statements of the company's assets and liabilities, so that the same may conform to the company's books and records and to its annual report to the Commission.

"Page 36:

"Page 51, line 22:

"Page 50:

"Page 49, line 15:

"Reference is made to our letter to the Commission dated September 27, 1917. As stated therein in order to avoid any misunderstanding in relation to the provision which the company had theretofore made (a) for the amortization of capital in plant withdrawn from service and (b) for such contingences or casualities as those caused by fire, flood, earthquake, insurrection, *flood, earthquake*, riot, or any other hazard, the Board of Directors adopted a resolution providing for a division between the provision for amortization and the provision for contingencies. This change was in strict accordance with statements repeatedly made to the Commission as to the purpose of the reserve which had theretofore been carried in a single account. As stated, it was intended to avoid any misunderstanding or ambiguity in relation to what this company had actually done in con- [fol. 1316] nection with the maintainance of its property in service and in connection with providing for contingencies as stated.

"The Company's report to the Commission for the year 1917 is in accordance with the Company's accounts and records and states exactly what the company has done, under the direction of its Board of Directors.

"The provision made during the year 1917 for the maintainance, by renewals and replacements, of the company's property devoted to the Public Service, or in other words, for the amortization of capital invested in such property as is withdrawn from service—is not in conflict with the accounting order as we understand it.

"Very truly yours, A. F. Staniford, Vice-President."

Now, I offer in evidence a letter from the Commission dated September 10th, 1918, to the Brooklyn Union Gas Company; A. F. Staniford, Esq., vice-president, 176 Remsen Street, Brooklyn, New York.

The Master: The same objection, exception and ruling.

(Received in evidence and marked Defendants' Exhibit No. 44.)

Mr. Cummings (reading): "Your letter of August 16th, 1918, in answer to our directions that your procedure be [fol. 1317] brought into conformity with your rule concerning amortization the reports form and the Uniform System of Accounts is entirely unsatisfactory.

"Argument in favor of a different regulation than that established by the Commission was properly addressed to the Commission in recent conferences on the subject, but until the Commission acts upon that argument, the existing regulations should be observed.

"Very truly yours, James B. Walker, Secretary."

AFW:LER.

Now, the next letter is the letter of October 5th, 1918 from the Brooklyn Union Gas Company to the Public Service Commission, First District, 49 Lafayette Street, New York City.

The Master: The same objection, exception and ruling.

(Received in evidence and marked Defendants' Exhibit No. 45.)

"October 5th, 1918.

Public Service Commission, First District, 49 Lafayette Street, New York City, N. Y.

GENTLEMEN: Replying to your letter of the 10th ultimo [fol. 1318] in reply to our letter of the 16th, 1918, in which you refer to the rule of this company concerning amortization, and to the request contained in a letter from the Commission, dated June 12th, 1918 that this Company's procedure be brought into conformity with such rule, we desire to state that it was for the purpose of bringing our procedure into conformity with said rule and to do so in such

manner as would avoid any misunderstanding in relation to the provision which the company had made and is making for the amortization of capital invested in plant withdrawn from service and for contingencies, that in August, 1917, resolutions were adopted by the Board of Directors in this regard which were communicated to the Commission in full in a letter dated September 27th, 1917, to which reference is here made.

"That the Company's procedure under its rule had theretofore been unsatisfactory to the Commission was evidenced by requests that it be corrected.

"For example, a letter, dated May 1st, 1915, from the Commission stated, 'from the rule explaining this item' (accrued amortization of capital)' and from the amortiza-[fol. 1319] tion rule filed with the Commission, it appears that respondent includes this item 'Contingencies' and a provision for 'minor extensions and additions.' This is contrary to the provisions of the Uniform System of Accounts. Please authorize appropriate corrections.'

"A similar request appears in a communication from the Commission dated July 30th, 1915, in which it is stated 'The Accounting order does not permit the inclusion in the reserve of any provisions for 'contingencies' and for 'extensions and additions.' Please file an amended rule for amortization and authorize the correction of the report.'

"In a letter dated May 10th, 1916, similar objection was to the company's procedure, accompanied by the statement that the 'inclusion of such elements' (as contingencies) 'in the operating expenses is contrary to the provision of the accounting order and appropriate corrections should be authorized.'

"And again on June 21st, 1917, there was reiterated in substance what is above quoted.

"The action of the directors in August, 1917, therefore, served not only the purpose stated in our letter of September 27th, 1917, referred to above, but it served, inci-[fol. 1320] dently, to meet the objections, theretofore made by the Commission to the Company's procedure.

"For example, the Commission stated that the inclusion of a provision for contingencies in the operating expenses was contrary to the provisions of the accounting order,

which did not permit the inclusion of any such provision. This has been corrected by treating the reserve for contingencies as an appropriation of surplus directly, rather than through the medium of expense accounts, although this, in our opinion, raises a question of form rather than substance. In any event, as the Commission repeatedly stated that the Company's procedure theretofore had been a mistake, it will, presumably, accept the procedure established in August, 1917 as a correction of the mistake. Said procedure does not conflict with the Company's rule concerning amortization and as stated in our letter of August 16th, 1918 does not conflict with the accounting order as we understand it.

"The report form, in so far as it provides for a deduction from the assets of the amount provided for amortization of capital invested in plant withdrawn from service, is not based on any rule contained in the Uniform System of Accounts. As a matter of fact, the reports forms of the [fol. 1321] Corporation in which the operation of this company for the years 1908, 1909, 1910 were reported to the Commission, which were presumably designed to conform to the Uniform System of Accounts, properly treated all reserves as credit items in the statement therein of the Company's assets and liabilities, and it was not until 1912 that the report form, provided for reporting the operations for the year 1911, contained the innovation by which the assets were made to appear to have diminished by the amounts shown in reserve account.

"For reasons set forth in some length in our letter dated, August 16th, 1918, to which the Commission is respectfully referred, this Company's procedure has never, unless by clerical inadvertence, conformed to the reports form in this regard. For the same reasons it is again urged that the Commission's published statements of the Company's assets and liabilities be corrected so that they conform to the Company's books and records, and its annual report to the Commission.

"As stated in that letter, the Company's report to the Commission for the year 1917, is in accordance with the Company's accounts and records and states exactly what the Company has done under the direction of its Board of Directors.

"The foregoing applies not only to the Brooklyn Union Company, but also to its affiliated companies.

"Yours very truly, A. W. Staniford, Vice-President."

[fol. 1322] Brooklyn, New York, March 28, 1924.

JOHN I. BLANCHFIELD

Direct:

I am assistant auditor of the plaintiff company and also of its so-called subsidiaries. I have been in the gas industry eighteen years. I entered the employ of the Kings County Lighting Company in 1906. I was first bookkeeper on the customers' ledger; later on I became application clerk and sold stoves, and then became cashier; later I became general bookkeeper and then auditor of the company, and assistant secretary; then in 1919 I was employed by the Brooklyn Union Gas Company, and, in February, 1920, I was made Assistant Auditor of that Company and am still assistant auditor. My experience with the Kings County Lighting Company includes my experience in what is generally called the Commercial Department and the Accounting Department. I had experience in what is known as the Distribution Department. It came about in this way, that the man who was then vice-president and chief engineer, Thomas Byrne, became sick and for five years while he was mentally able to take care of his business, he was not physically able, and I acted as his immediate deputy not only in the Distribution Department, but also as to the Manufacturing Department and also construction work. By that I mean I went over all of the reports for him and [fol. 1323] investigated such matters as he asked me to investigate. I also read and advised with him as to specifications for contracts for property that was bought, new installations, and the like. My duties generally are assistant to Mr. Payne, the Auditor, in the management of the accounting department. Principally, however, since I have joined the forces of the Brooklyn Union, we have had much rate litigation and my assignment by Mr. Payne has been to look at that branch of his office, because in cases of this kind the office of the Auditor is called upon to furnish so much

data he requires me to look after this end of the business so that he might be able to devote his own time to the management of his office. I was first called upon to estimate on charges by the plaintiff to its so-called subsidiaries some time late in 1919 or early in 1920. During 1919, as I recall it, there was what we call a flat charge of 65 cents per thousand cubic feet for gas purchased by the subsidiary companies. That was changed in the year 1920. I estimated for the purpose of that change. We simply stated the flat rate by charging the subsidiary companies, first, for the gas they bought figured at works cost, and in addition to that we charged to the Newtown and Flatbush companies 16 cents for each thousand, and the Fourth Ward companies 21 cents for each thousand, for services rendered and for the use of property. In 1921 I reviewed the [fol. 1324] situation, saw how the plan worked out in 1920 and concluded from a review of the figures that it would be well to continue those same charges in effect during the year 1921. I did the same thing for the year 1922. I reviewed the situation, and after having put the figures together, I concluded that the 16 and 21 cent charges were insufficient, and the figures that I developed indicated that the price should be raised and it was subsequently raised as to the Newtown and Flatbush companies to 21 cents, and as to the Fourth Ward companies to 26 cents.

I wrote and transmitted the letter (Defendants' Exhibit 33) to Mr. Jourdan, the President, on or about January 24, 1923. That was a result of a calculation of the same nature, for the year 1923. The calculation which I made for the prior years did not differ in any respect as to method from this calculation. In testifying about the calculation that I made as the basis of this letter I will be stating my method in the prior years. I started my calculation by determining the relative sales of each company in the Brooklyn Union system to the total, for a given year, by taking the sales of each company to its general consumers to determine the ratio of the use of property used in common and to determine by that ratio the amount of the administration expenses that each should bear. And as to the Fourth Ward companies there is a second—I ascer- [fol. 1325] tained the gross send-out of gas by the Brooklyn Union and then ascertained the amount of gas sold by

each subsidiary and by the Brooklyn Union and those figures gave me the basis of a ratio. After stating that, I passed at once into a statement concerning property used. The gas plants of the Brooklyn Union Gas Company make all of the gas sold by each of the six companies that we called the Brooklyn Union system. I determined from the sales of each one of those six companies how much each sold and the relationship that each bears to the total. I apply that ratio as the proportion of the use of the property used in manufacturing gas. I find out what that was, for instance, for 1922, and apply that in 1923. As I was about to say, in the case of the Fourth Ward companies there is a little different arrangement there because the Fourth Ward companies have no holder station facilities other than those furnished by the Brooklyn Union Company. For that reason I make a separate grouping of companies, consisting of the Fourth Ward companies, and the Brooklyn Union Company. On the basis of those ratios I assign the property that I conclude to be useful in the service of the various companies; that same ratio. I also apportion the taxes on that same property and apportion an amount to provide for the renewal and replacement on that property, not exactly on that same ratio, but on a slightly different theory. In fact, it is an estimate. [fol. 1326] It is not based on that ratio at all. Then I take the administration expenses, and by that I mean such members of the staff of the Brooklyn Union Gas Companies whose duties extend to the entire gas distribution system and I apply those same ratios to that group of officers and employees. That includes the distribution officials as well as the general officers and the general office staff. Then I calculate that the Brooklyn Union Gas Company employs a sum equal to 20 cents per thousand cubic feet of gas made for the purposes of working capital. I mean the quantities of oil and coal and other materials on hand. That is ascertained in this way: Reviewing the amounts on hand of these commodities generally it is equal to about 40 cents per thousand cubic feet of gas sold. That is, not only for manufacturing working capital but also for working capital in the Distribution Department, and taking half of that—the subsidiary companies have no interest in the working capital employed in the distribution of gas. Then, after hav-

ing ascertained as to the manufacturing capital, that is, I mean the works plants, I also include such buildings as are generally used by the general administration staff, such as our general office building down here in 176 Remsen Street, the Fitters' School, the Laboratory, and the Meter Repair Shop, and I apply the same ratio to those. Then I calculate that the Brooklyn Union Gas Company should receive an 8 per cent return on that property, and I set [fol. 1327] down that sum. Then as to the Fourth Ward Companies I first give them their proportion of these other pieces of property that I have referred to, and then I make another distribution on the holder station facilities, and applying the ratio I find there to the holder station facilities, I also get the holder station properties in their service. I then take the transmission main facilities and apply those on the same ratio, on the theory that all of the gas that goes out goes through this transmission system and they all benefit by the use of that system to the extent that they apply to the ratio of the total. Having summarized all these amounts, I come to the conclusion that, for example, for 1922, I should charge a given company, say, X dollars for the services. My next step is to determine what quantity of gas it would be necessary for the Brooklyn Union Company to manufacture in order to meet the requirements of a given subsidiary, and having determined that quantity by estimate, I divide that quantity into the sum in dollars, which gives me a figure of so many cents per thousand cubic feet, and it is that number of cents per thousand cubic feet that is used in applying to every thousand cubic feet that that particular company buys in a succeeding year. After having reviewed the situation as to 1922, I concluded that the sum that the Newtown Company should pay for these services, in round numbers, [fol. 1327½] was $336,000. I estimated that the Newtown Gas Company would need to meet its requirements, in round numbers, 1,600,000,000 cubic feet. I then proceeded to divide the $336,000 by the 1,600,000,000, and arrived at a result of 21 cents per thousand. As it turns out, my estimate was wrong, and in fact, the Newtown Company's requirements equalled, in round numbers, 1,800,000,000. Now, had I estimated accurately and estimated it at 1,800,000,000, I would have divided this $336,000 by a greater sum

with the result that I would have gotten a smaller dividend, and if I have erred at all, I have erred to the advantage of the consumers in Brooklyn, because I would have charged the Newtown Company only, say, 19 cents a thousand. I would have been in error had I just concluded to charge the Newtown Company $336,000; but that was not what I was after. I was after a figure to be resolved in cents per thousand, so if the demands varied, the costs would vary with the demand. That completes my statement. In arriving at this conclusion, I took into consideration the gas used by the Brooklyn Union Gas Company in the manufacture of gas, but I did not set it down in my computations. I considered it, and I knew that there was gas used at the works. The amount per M was one-tenth of a cent. In other words, I considered it, figured it out, and disregarded it. I also considered repairs to transmission and distribution mains, that is, I considered the repairs to the mains, [fol. 1328] but I made no calculation of the charge to the subsidiary companies for it, because I do not think they should be charged for it. Here is the physical situation: You have a main system that runs from Brooklyn into Queens and from Queens back into Brooklyn. Now, if I were to charge the subsidiary companies for the repairs to the mains in Brooklyn, I would have to go back to the subsidiary companies' books and calculate their repairs to mains and charge Brooklyn for the Brooklyn portion of that. I considered this subject, arrived at that conclusion, and left it out. If I had known what the actual sales of the subsidiary companies would be, and used that figure instead of my estimated figure, the charge would have been less than 21 and 26 cents.

I also considered the electric department of the Flatbush Gas Company. The Flatbush Gas Company has a slightly different organization, from all the other companies, because it handles its own business, has its own general manager and electrical engineer, has its own electrical engineering staff, its own production and distribution staff and commercial department. The charges of the gas business are based—well, 21 cents; 11 cents of that is for the use of the gas property, so that the electric company benefits nothing from the presence of the gas property. Most of the other expenses are taxes on and the operation of the

gas properties, and provide for the replacements of the gas properties, out of which the electric department gets [fol. 1329] no benefit. There is, however, some work done by the Brooklyn Union Gas Company's general staff for the Flatbush Electric Department, consisting chiefly of such work as I might do or Mr. Jourdan might do, or the Purchasing Agent, but it is very small, and as to the general office clerks, he had two clerks in his office who do nothing but work on the Flatbush Gas Works, and while it is true that they are carried on the Brooklyn Union Gas Company payroll, they are immediately transferred to the Flatbush, so that the only services the Flatbush people get out of the Brooklyn Union staff is just as I have stated. I considered this subject when I first started making these calculations and reached that conclusion, that the services were negligible, and disregarded that. The same conditions have prevailed in the succeeding years. About 10 per cent of the plaintiff's fixed capital I found devoted to the use of the subsidiaries as a result of this study. In other words, one-tenth and not one-quarter, as stated the other day. I have already stated that I calculated the working capital —devoted to the subsidiaries, and came to the conclusion that 20 cents per thousand feet made was the proper allocation. That is my own estimate. I have stated how I arrived at it.

[fol. 1330] J. I. Blanchfield

Cross:

In my computation I was trying to arrive at some equitable charge to make as between the Brooklyn Union Gas Company and the subsidiaries, and I used my best endeavors to ascertain that charge. I had before me when I computed the charge for 1923, the consumption or the sales to the subsidiaries in 1922. The sales to the Newtown Compay in 1922 were 1,519,311,907 cubic feet; the Flatbush Company, 1,252,665,359 cubic feet and the Fourth Ward companies, 1,329,021,725 cubic feet. Those figures were before me, also the consumption or the sales made by the Brooklyn Union, for the year 1922. As to sales of the Brooklyn Union Company in 1922, I didn't use those two in the same computation. Those are different figures. I arrived at a

ratio of 79.18 for the Brooklyn Union Gas Company, and for the subsidiaries 20.82, but not using those figures that I called off. I arrived at those two ratios by considering the quantity of gas sold by each company. The figures which resulted in that ratio are: The Newtown Company sold 1,350,861,062 cubic feet. The Flatbush Company sold 1,111,959,698 cubic feet. The Woodhaven Company sold 520,093,760 cubic feet. The Richmond Hill sold 209,821,814 cubic feet. The Jamaica Company sold 452,005,929 cubic feet. The total quantity of gas sold by the five subsidiary companies was 3,644,742,263 cubic feet. The gas [fol. 1331] sold by the Brooklyn Union Gas Company in its franchise territory was 13,859,896,959 cubic feet. The total gas sold by all companies was 17,504,639,222 cubic feet. Those are the figures I used in making my computation. I put the Brooklyn Union sales in the franchise territory. By that I mean to distinguish it from gas sold to its direct consumers, as distinguished from selling it at wholesale to the subsidiaries. The amount of the sales of the Brooklyn Union then is 79.18 per cent of the total which I have given. Then I add the sales by all of the subsidiaries, not to all of the subsidiaries, because they buy more than they sell. These figures which I have given for the subsidiaries—bear a ratio to the total which I have given of 20.82. The Newtown Company was 7.72 per cent. The Flatbush Company was 6.35 and the Fourth Ward Companies, as a group, were 6.75. I treated the Fourth Ward Companies as one group. I can give the individual percentages of the Fourth Ward Companies. In some cases I have treated them in that way, and in some cases I have not. In so far as my allocation of administration expenses, I treated them as a group. In fact I did in every respect. My purpose with the Fourth Ward Companies was to arrive at the property used by each, not particularly for the purposes of this allocation, but for other purposes. For the purpose of arriving at a proper ratio in which to divide certain expenses, I [fol. 1332] made no estimate whatever of the future requirements of the company. That is, I used a ratio for the purpose of ascertaining the correct charge per thousand cubic feet, without making any prophesy whatever as to the amount of sales in 1923. That ratio was used in determining, not the charge in 1923, but the unit of the

charge for 1923. My ratio itself was determined upon actual experience. Had I made another computation at the end of 1923, following the same figure, the same method, I would have obtained a slightly different ratio. The ratio would be 77.58 per cent. to the Brooklyn Union Gas Company, and 22.42 per cent. to the subsidiary companies, and that would be divided: Newtown, 8.33 per cent; Flatbush 6.41 per cent., and the Fourth Ward Companies, 7.68 per cent. Had I made my allocation or computation based upon the actual sales in 1923 instead of the actual sales in 1922, I would not have reached a ratio of 77.58 for the Brooklyn Union Gas Company, and 22.42 per cent for the subsidiary companies, instead of the ratio which I used of 79.1 per cent. for the Brooklyn Union and 20.82 per cent for the subsidiary companies; for this reason, that at the beginning of 1923, as indicated by the 1922 result, the subsidiary companies were 20.82 per cent. of the total. At the end of 1923 they were 22.42 per cent. of the total. Now, some place in there during the year they varied up 1-1 2 per cent. of the total. The fact is that when I made this [fol. 1333] computation I did not have the figures that counsel has just given me because they did not exist. I have them now, and had them shortly after January, 1924. The ratio that I have made in February for this next year,—I haven't finished it yet, but I have arrived at the ratio. It was, to the sub-companies, 22.42, and to the Brooklyn Union, 77.58. I am going to use the experience of 1923 in ascertaining the ratio for 1924. In making my computation I tried to ascertain separately the proper charge for Distribution expenses, for general expenses, for taxes, for renewals and replacements, and then I reached a total for my expenses; then I computed a return on my fixed capital and also a return on my working capital. The various items that I determined and the amount of money which I thought should be allocated to the three subsidiary companies affecting those expenses are: for the Newtown Company; Distribution Expenses, $16,689.89; for General Expenses, $70,131.04; for Taxes, $58,454.70; for Renewals and Replacements, $15,920. Total expenses, $161,195.63. That amounts to 10.12 per M. For the Return on Capital, Fixed, $149,131; Working Capital, $25,472; Total Return on Capital, $174,603, amounting to 10.97 cents. That 10.97

cents per M is divided into 9.37 as being return on Fixed Capital and 1.60 as a return on my Working Capital, and the total of return on capital, as well as expense is $335,-798.63, being 21.09 cents per thousand. I do not think from my computation that the Newtown Company should be charged with an expense of $335,798.63 amounting to 21.09 cents per M. I calculated that they should be charged with [fol. 1334] 21.09 cents per M and that $335,000 was merely a device to arrive at that conclusion. The Flatbush: Distribution Expenses, $13,728.08; General Expenses, $57,685.50; Taxes, $48,064.46; Renewals and Replacements, $13,150; Total of expenses, $132,628.04; being 10.09 cents per thousand. Return on Capital: Fixed, $122,664, being 9.33 cents per thousand. Working Capital, $21,040, being 1.60 cents per thousand. Total return on capital, $143,704, being 10.93 cents per thousand. The total is $276,232.04, being 21.02 cents per thousand. The Fourth Ward Companies: Distribution Expenses, $18,419.94; General Expenses, $77,-726.67; Taxes, $65,398.69; Renewals and Replacements, $14,430. Total of expenses, $175,975.30, being 12.19 cents per thousand. Return on Capital: Fixed, $168,712, being 11.69 cents per thousand. Working Capital, $23,088, being 1.60 cents per thousand. Total return on capital, $191,800, being 13.29 cents per thousand. Total, $367,775.30, being 25.48 cents per thousand. As to all companies, I considered the Distribution Superintendence, Shop Distribution General, Street Department and the Fitters' School. As to Distribution Supplies and Expenses, I considered the same three accounts. Then I totalled that and divided it on the basis of the relative sales in the percentages that I have already read into the record. Newtown, 7.72 per cent; Flatbush, 6.35 per cent; and the Fourth Ward, 6.75 per cent. Then I proceeded to make another computation based [fol. 1335] on the following: Distribution Superintendence of the Holder Distribution Department, and the Distribution Supplies and Expenses of the Holder Distribution Department. I then assigned to the Fourth Ward Companies 7.86 per cent. of that, so that the Fourth Ward Companies have two assignments there. The last named accounts were distributed totally to the Fourth Ward Companies and the Brooklyn Union Company. I considered but rejected the Repairs to Transmission and Distribution System. I haven't

the figure before me of the Repairs to the Transmission System in the year 1922, but my recollection is around $7,000. The transmission system as well as the distribution system goes from Brooklyn to Queens County and from Queens County back to Brooklyn and had I arrived at any determination as to what share the subsidiary companies should bear in the cost of maintaining the Brooklyn System. I feel that in justice to the subsidiary companies the Brooklyn Company should bear a proportion of their comparable charges. When I come to ascertain the rate of return on Fixed Capital, I include a portion of the Transmission System, although here I do not consider the repairs to that same transmission system. In other words, I think the property itself should be allocated as between the Brooklyn Union Company and the subsidiaries, but the work done upon that property should not be allocated. That is not the same theory, that Mr. White's time should be allocated, but the automobile in which he rides should not. That is [fol. 1336] a different theory. The reason for it is this: That where the Brooklyn Union Company uses the transmission main facilities of the subsidiary companies, the arrangement is identical, that is to say, the Brooklyn Union Company pays for a return on the transmission main facilities of the sub-companies, but they keep it in repair themselves, and that is exactly what the Brooklyn Union Company does with respect to its business with the sub-companies. I did not take into consideration in our works cost the amount of consumption of gas that was used in the manufacture of gas. I looked at that figure but disregarded it, apparently because it was so small. The expenses that I did allocate for the Fitters School of Instruction, Distribution Supplies and Expenses, in 1922 were: $578.58; Superintendence, $3,084.55. The item of $578.58 is one of a number of items. I did not reject that because of its smallness, because it did not stand alone. That item standing by itself is much smaller than the cost of the gas used at the works, but it is only a portion of the Fitters School. All of the distribution supplies and expenses incurred by the Brooklyn Union Gas Company are not allocated. The ones that are allocated are on this sheet. I could not tell how many departments are included in our distribution supplies and expenses. I would have to find

out. I knew at the time I was making this thing up, had it all before me; but what ones I disregarded, I do not now re- |fol. 1337| call. I cannot tell the divisions of that account. I took in the General, and Distribution Supplies and Expenses of the Shop Distribution Department, and the Street Department. I did not take the Shop Distribution for the local shop that confines it activities to the needs of the customers in Brooklyn; I disregarded that. There appear to be five divisions, two of which I disregarded and three of which I allocated, under the two sub-titles that I disregarded and "Distribution Supplies and Expenses," one of them is entitled "General" and the other is entitled "Shop Distribution Department." I have made some rough figures on that for 1924. I used that forecast as a divisor, and not in computing my ratios. I compute the ratios on the fact of the prior year. The account headed Shop Distribution Department covers the supplies and expenses used in the central Brooklyn shop for work exclusively in Brooklyn, the field supplied by the Brooklyn Union, and that is the account that I disregarded of the four, and in that field the subsidiaries do not supply any consumers, nor is any of this material used for the subsidiaries. To finish my other answer, of the five accounts, I have disregarded this one. The other four I have considered; not only considered but included. I included general. The Shop Distribution General, which are the supplies of the Administrative Staff at 176 Remsen Street, the Street Department and the Fitters School, I divided among all |fol. 1338| the companies. Then the fourth account, which is the Holder Distribution Department, I divided only as to the Fourth Ward Companies, that being an expense for operation of the holder. That is the General Holder Distribution Department. The word "General" appears upon the books, the expenses of the Holder Distribution Department. I allocate that, only to the Fourth Ward Companies. I don't allocate it to the Newtown Company and the Flatbush Company, because they maintain holders of their own, and they pay their own expenses, in so far as their holders are concerned. The gas in all holders is used by all of the companies. As far as anybody has been able to determine, I think that is a fair statement. The thought of allocating between all of the companies all of these expenses per-

taining to all of the holders has occurred to me several times, but I feel that the allocation as made is as close as you can get to a fair division of the expenses. I would not say it would have been better if I had made that, but I have discussed that with my associates, and after discussing it and looking into it, I concluded that this is a fair way. One reason why I do not assemble the entire holder departments in one and allocate them to all of the companies, all of the holders, was, it was far more simple and more readily understandable. If I attempted to do this, I would have to take into consideration all of the holders, all of the taxes, all of the land, all of the property, and [fol. 1339] divide it between all of the companies. I don't think that would add to the complications of the allocation that I have already made, but as to any further reason why we did not adopt it, it does not occur to me now, but it did at that time; we discussed it. I had a percentage which I applied in making allocations between the Brooklyn Union Gas Company and the Fourth Ward Companies alone. I took the quantity of gas sold by the Brooklyn Union Gas Company in Brooklyn, and the gas sold by the Fourth Ward Companies and determined the ratio that the Fourth Ward bore to the total and that the Brooklyn Union bore to the total, and, as a result, in 1922 the Brooklyn Union was 92.14 per cent. of the total and the Fourth Ward Companies were 7.86 per cent. of the total. The last answer related to the ratios which I adopted in making allocations between the Brooklyn Union Company and the Fourth Ward Companies as to holders. The accounts I distributed, using that ratio, were: Distribution Superintendence of the Holder Distribution Department, and the Distribution Supplies and expenses of the Holder Distribution Department. Those accounts carry the salaries of the men engaged in supervising the entire holder distribution department for the system and in the Supplies and Expenses account that shows the cost of incidental supplies. The gas from those holders, as far as I know, is used by each one of the companies, although I allocate them only to the Fourth Ward [fol. 1340] Companies, and the Brooklyn Union Company because the other two companies operate holders of their own. If I had used the actual figures of 1923 and the actual sales of 1923 instead of the sales of 1922, the ratios

resulting would be: the Fourth Ward Companies, 90.1 per cent; the Brooklyn Union Gas Company, 90.99 per cent. We probably will use that ratio in the year 1924.

Under the general expenses I include for by apportionment between the companies as: Salaries and expenses of general officers, salaries and expenses of general office clerks, general office supplies and expenses, general law expenses, that is, the retainer, miscellaneous expenses, repairs to general structures, 50 per cent. of the insurance, the relief department pensions, general stationery and printing, and store expenses at the works, shop, street department, general warehouse and the construction department. By rentals or repairs, I mean—there is provided for, but not in these accounts—a return on the property; that is, the building and its equipment, the land on which it stands, the repairs to it, and provision for the replacement of the building and its contents, and the taxes on the two. The warehouse at 1024 Fulton Street is treated a little differently. As to that, I assigned to the subsidiary companies the cost of repairing that building, the cost of operating it, provision for the replacement of such equipment as is there, and a [fol. 1341] return on the equipment. I did not, however, include the taxes on it or the return on it. That building is used for a variety of purposes. We do not include a return on the book cost of the building in our apportionment for this reason: It is true that the subsidiary companies are served from that building. I did not feel when I was making this allocation that it would be fair to the subsidiary companies to charge them the full apportionment, for this reason, that the building itself is used principally by the Nassau Branch and the shop distribution department. There is, however, storage space on two of the upper stories devoted to the storage of appliances, some of which eventually find their way into the subsidiary companies' territory. The subsidiary companies do not get all of their appliances from that building, but there is, however, a service rendered. I thought the fair measure of the value of this service would be found by asking them to pay for the maintenance of the building and the cost of operating. I think they do get the bulk of their appliances from there, but not all of them. The appliances are taken out to the territory of the subsidiaries by the automobiles of the Brooklyn

Union Gas Company, and the automobiles of the Brooklyn Union Gas Company are used by the general officers. I allocate the salaries of the general officers. The automobiles are also used for the purpose of delivering meters from the meter shop into the district of the subsidiary [fol. 1342] companies. The subsidiaries are charged for that service in this way—that they pay for the return on the equipment used in delivering it, for its maintenance, and they pay the chauffeurs' salary when they are directly assigned, and they also pay their proportion of the superintendence of the department for supervision over the vehicles. Let me go back just one step. I left out insurance on those automobiles, that is one thing I did, and here is the way I arrived at that conclusion, in regard to automobiles, taken in connection with other property. The Brooklyn Union Gas Company has certain pieces of fixed capital that are generally referred to as mobile capital, that generally consist of furniture, automobiles, office equipment, tools and implements and matters of that kind. Most of that is used by the Brooklyn Union Gas Company, as a matter of fact. Now, my method of arriving at a proportion to be assigned to the subsidiary companies is this: I assumed that the first 50 per cent. of this type of equipment is assignable wholly to the Brooklyn Union Gas Company, and that the other 50 per cent. is assignable on the basis of the relative use of gas, which has this effect, speaking in round figures: The Brooklyn Union Gas Company does about 80 per cent. of the business, thus giving the subsidiary company 20 per cent., but I first took 50 per cent. and assigned it solely to the Brooklyn Union Gas Company, so that division becomes a division of 90 per [fol. 1343] cent and 10 per cent. I give the Brooklyn Union Gas Company first 50 per cent and then I give them 80 per cent of that, which makes a division of 90 per cent and 10 per cent. That applies to all equipment of that kind, including automobiles. Then I allocate to the subsidiaries 10 per cent of the value of the automobiles. That is the effect. The cost of operating is in there, the insurance, and the supervision of the stable department, they pay for the repairs of the building in which the motor vehicles are housed, but they do not pay for the repairs to the automobiles, and they do not pay for the gas or oil. When the

chauffeurs are assigned, and such other chauffeurs as drive cars for the officials, for example, their time is allocated. When they use an automobile to deliver an appliance from 1024 Fulton Street to the territory of the subsidiaries, a return on the car, provision for its maintenance and replacement, insurance on the car, the chauffeur's wages, is allocated to the subsidiaries; that is, the cost of the delivery. The chauffeurs' wages are not allocated are directly charged, but that does not come into this calculation at all. That is the chauffeurs' wages are charged directly to the subsidiary companies. If he delivers a gas stove, the charge for the delivery, so far as the cost of this man who delivers it is concerned is traced through the reports of the stable department.

[fol. 1344] Brooklyn Union Gas Company, April 2, 1924.

JOHN I. BLANCHFIELD

Cross:

I haven't got the figures that I have charged the subsidiaries for the amount of gas sold to them in January, 1924. It consists of works cost plus 21 cents as to the Newtown and Flatbush companies, and 26 cents as to the Fourth Ward Companies. I charged them in February the same thing. I do not think the March gas has been billed yet, but it will be billed at the same price. I am going to continue the same price for the present anyhow. I am waiting for an opportunity to go into it and see whether it is as it appears to be now. From all indications it appears that the same rates will be in effect in 1924. The ratios are one and one half per cent different. The ratio in 1922 was 79.18 and 1923 77.58. I did not exactly calculate the estimate of the amount of increased consumption to be used by the subsidiary companies in the year 1923 on that basis, but it turned out to be that. I made an estimate of how much the requirements of the subsidiary companies would be for the year 1923. I did not estimate the amount of expenditure that they would have for those items which I included in my allocation. In other words, I took the same amount of money for the items, but used a bigger

divisor. In using a greater quantity of gas, that is my estimate was greater than the sales of the year on which I based my ratios, it is true that I felt the subsidiary companies would use more gas, and I felt that the Brooklyn [fol. 1345] Union Gas Company would use more gas, and I felt that the divisible operating expenses would increase by the increased business, and mathematicaly it does not make very much difference whether you do it one way or the other. If I estimated the subsidiaries' increases and also estimated that the Brooklyn Union Company increased, which I did do, the ratios do not vary to the extent to which they might appear to by reason of the increase in the subsidiary companies. I knew how much the expenditures were increased year by year, general and miscellaneous expenditures. As I figured the general and miscellaneous expenditures, the divisible expenses, which included some of the miscellaneous general expenses, some of the distribution expenses and some of the taxes, increased about 18 per cent in 1923 over 1922. I did not estimate in effect that they would remain the same. I used those figures but in using those figures I was after a unit. I used the same identical figures but used a larger divisor. If the thing did not turn out as it did, it would be, but as it turned out, it was all right. I had three things to estimate in order to get my problem. Those items had increased from year to year. That is 1921 had increased over 1920 and 1922 had increased over 1921. No I did not make any estimate of what the increase would be for 1923 over 1922 because I was not after that. I was after a correct result to charge the subsidiaries and I think I got it. I was going to charge them a certain proportion of the expenditures to be made in 1923, based on the quantity of gas they took, based on the cost per thousand absolutely. I estimated the amount [fol. 1346] of gas which they would use and used that as a divisor. As to the amount of expenditures that I had made in 1923, I took the experience of the companies, that is, I assumed that in 1923 the expenditures for those items would be the same as in 1922, in order to get a unit cost. Prior to that, the 1922 expenses had increased over the expenses for 1921 on the same items, and at the end of the year it developed that the expenditures had increased about 18 per cent in those items in 1923 over 1922. I did not

think they would remain the same and I did not proceed upon that theory, because my endeavor was to resolve the thing into cents per thousand, and if the expenses increased and the volume increased, the cost would increase to the subsidiary companies. I took the self same dividend but increased my divisor by 6 per cent. I have your computation for 1923 there and this is my computation.

(Marked Defendants' Exhibit No. 46 offered in evidence.)

I did not make figures for 1924. I had one of my clerks make up some figures, but which I have not checked. The relatives sales by the Brooklyn Union have to do with the problem of charging the subsidiary companies, because of the amount that they will each share in the apportionable expense. I charge them first the actual cost of making the gas, and then take certain items of expenditure, and add those up. I took the actual expenditures in 1922, instead of dividing by the number of cubic feet in 1922 I estimated how much gas would be sold to the subsidiary companies in 1923 and used that increased figure as a divisor. I estimated how much our expenditures would increase in 1923 over 1922. I think I sense now what the difficulty is. [fol. 1347] I didn't halve my sums. When I estimated the requirements for the subsidiary companies for a succeeding year I estimated 6 per cent more than the fact of the last year. Now the Brooklyn Union Gas Company itself naturally would take more than it took the last year, and it is reasonable to suppose they take 6 per cent more. It does not come out wrong. Had I had before me the fact of what the subsidiary companies did use and the fact of the assignable expense, that I did not have with me, but had I had them and made the division on both of those things, I would have come out right, as it turns out. I might have been able to estimate the increased expenditures as well as the increased amount of consumption of gas, but I did not. I increased my divisor—estimated an increase for that, but I did not estimate an increase for my dividend. I do not think I have calculated what the result would have been of dividing the actual consumption by the subsidiaries into the actual assignable expenses. I did not say I made such a computation. I said that I had made calculations as a forecast for 1924, but that is not the

question I was asked. The actual figures as opposed to the estimate figures, taking the actual expenditures of 1923 instead of the actual expenditures in 1922, I have not made any calculation about the adjustment figure exactly. * * * [fol. 1348] Having once made the computation and decided upon the various items of expense that go into the computation and also my method of making is a pretty lengthy job to make the computation. It would take a day, after deciding the items of expenditure that should go into it. It takes a day with a fast man on calculating machine, giving no heed to exactly what he is doing but working mechanically. I made these last year, somewhere along in January. I am not waiting until the 1st of April for anything at all; I am as busy as I can be. I can't make the allocation within a very few days after January 1st, for the reason that I have many other things to do, and this is not a simple job to sit down and conclude that this is all right. It is a matter that requires study. I have already the difficult part of the allocation is determining what items of expense shall be allocated. There are a number of issues come in there. I have deferred it. I will just illustrate: After looking over the 1923 results, in one instance, I find that I have charged the subsidiary companies for Federal Income Tax about $100,000 more than their portion of it would be on the basis of the taxes levied. Now the question in my mind is should I make a readjustment on that basis, that is, should I look into the future another year and look into that thing. That is a difficult thing to do, for this reason, that the income tax is a system affair; it is paid on the taxable income. In my study of the situation here I charge the subsidiary companies for the income tax on the theory that they would earn with 8 per cent return on the property used. If the Brooklyn [fol. 1349] Union Gas Company does not make that rate of profit on the rest of its property, the subsidiary companies are contributing more than their equitable share of it. That is what the fact was in 1923, those fellows paid $100,000 more than they should have paid. I am not deferring it because I want to ascertain whether the consumers of the subsidiaries should pay a return upon the reproduction value instead of the book cost. I am not confronted with that problem. In charging the subsidiaries, the

sub companies were not charged with automobiles devoted to their service, as to the up keep and the oil and gas used in the automobiles. We charge them for the salaries of some of the chauffeurs who are assigned to some of the departments. Salaried Chauffeurs are charged in Miscellaneous General Expenses, and that is an account which is apportioned. The salaries of the chauffeurs is an account that is apportioned between the Brooklyn Union Gas Company and the subsidiaries. I couldn't tell you the names of the chauffeurs whose wages are allocated between the Brooklyn Union and the subsidiary companies, but they are those chauffeurs who are on a salary basis. I have certain chauffeurs that we assigned to the general officers. I have one; his salary is allocated between the Brooklyn Union Company and the subsidiaries. We have two chauffeurs in the New Business Department. I don't know whether their salaries are allocated between the Brooklyn Union Company and the subsidiary companies. I would not be sure about that. None of our New Business Department's expenses are allocated between the Brooklyn Union and the subsidiary companies. I am not sure whether the chauffeurs' salaries are allocated because I do not carry in my [fol. 1350] mind now exactly to what account his time is charged. I do not know to what departments those chauffeurs are assigned. There is one assigned to the Executive Department and two assigned to the business department. There are two or three in the Treasurer's Department, that drive the paymaster's cars; in the Street Department there are probably three or four, who drive cars for the executive—that is, the superintendents of that department. Then in the Shop Distribution there are two or three, and in the Holder Distribution, two or three, and Mr. Bush has one in his department. Those I state from memory; there may be others that do not occur to me at this time. I have over in my office records showing the allocation of the chauffeurs' wages to the various departments and where everybody's time is charged, that is, the chauffeurs' particularly. I do not know whether those chauffeurs appear upon the Department payrolls, or upon the chauffeurs payroll. I think some of them are on the department payroll. I am not positive about that, so that in order to find out the total allocation or assignment of

our chauffeurs to the various departments, we would have to analyze the whole business. We have that analyzed in departments—in the Accounting Department. There are payrolls in the Accounting Department for every man that is paid. A reference to the payroll book, from which this payroll is made up, will show exactly to what account his time is charged. To those same departments, we do not allocate the cost of operating the automobile, that is, the oil and the gas and the repairs used. For instance, the New Business Department uses two automobiles; they [fol. 1351] have two chauffeurs. We charge the cost of running automobiles to Stable Expense. That is according to the Uniform System. The Stable Expense is not allocated, as between the Brooklyn Union and the subsidiaries; not in this blanket allocation, except where there is an automobile owned by the Brooklyn Union Gas Company, directly assigned to the subsidary companies, they are then charged directly for that service: to do some special work, but in their general work that is not allocated. We allocate no expense of the Promotion Department as between the Brooklyn Union Company and the subsidiary companies. We do not allocate the advertising and the demonstrations or the expenses or any portion of the Promotion or New Business Department for the year at 176 Remsen Street. The supervisory staff of the Stable Expense, Automobile Department is allocated. Their salaries, that of Mr. Lewis and the supervisory staff, are charged into the accounts that are allocated. I am not sure whether Lewis is in Salaries and Expenses of General Office Clerks or whether he is in Distribution Superintendence. I think he is in Distribution Superintendence, and that is allocated. I can't tell from any record that I have where it is allocated. I would have to go to a long list of names and details; but my recollection is that Lewis and his staff are charged to the account Distribution Superintendence. He has a number of clerks, stenographers and assistants. I don't know how many, roughly, I should say he probably has thirty. That is a pretty rough guess, but I should say that is about right. Lewis does more than look after 108 automobiles. He looks after the Shop Distribution Depart- [fol. 1352] ment, setting and removing meters and work on

consumers premises, and that sort of thing. His office is on the second floor of 176 Remsen Street. We have a number of garages. We have one at 1024 Fulton and one down on Third Avenue. Lewis has charge of the garages. I could not tell who, under Lewis, has charge of each garage. I know who has charge of the automobiles at 1024 Fulton Street, but I cannot recall the names of the men, and there are some cars stabled out in East New York, that is, at the Citizens Branch, Union station. I do not remember the man's name who has charge of them there. I am not sure whether we have cards down in Plymouth Street or not, or whether that is devoted entirely to repair work. I would not be sure about that. The man who had charge of the repairs died recently. I do not know who his successor is. I could not say whether his salary is allocated in any way without looking up the detail. I did not allocate a portion of the account Stable Expense, Automobile to the subsidiaries, except such part of it as was charged directly. There was no effort on my part to assign any of that expense, that is, the cost of operating, to "Automobile" in this blanket charge. Stable expense, automobile was not one of the accounts that I added together and apportioned.

I made an allocation of the real estate taxes. I took the real estate taxes levied against land and improvements at the works and divided that on the basis of the sales of gas; that is, on the first allocation I considered the Brooklyn Union and the five subsidiary companies, that was using that ratio of 79.18 and 20.82. Then I took the real estate [fol.1353] taxes levied against land and improvements at the holder station, and I divided that on the basis of 92.14 and 7.86 per cent, that is, I allocated those between the Brooklyn Union Company and the Fourth Ward companies alone. I took a group, a number of buildings that I style "General," by that I mean the office buildings down at 176 Remsen Street, the meter repair shop, the laboratory and the Fitters School. I think those are all I included in that class, and I assigned that on the basis of 79.18 and 20.82. Then I took other buildings such as the Williamsburg Branch over on Bedford Avenue, the Metropolitan Branch down here in South Brooklyn, and the Nassau Branch, and

buildings of that kind devoted exclusively to Brooklyn, and I assigned that entirely to Brooklyn Union. Among the ones that I assigned to the Brooklyn Union was 1024 Fulton Street and 130 Atlantic Avenue. I allocated the special franchise tax too. I took the total assessment levied by the State Tax Commission. I took the tax resulting from that levy and I apportioned it on this basis: The reported values of tangible property in the public streets was the figure used by the Tax Department in arriving at its tax assessment. They are identical figures. The value reported in our tax report is so many dollars. The assessed valuation arrived at by the State Tax Department is that number of dollars identically. That valuation consists of mains in the street and services in the street; that is, one half of the services being considered in the report as being in the public highway. The mains divided into two classes, transmission mains and distribution mains; taking on the one hand the distribution mains plus the services, which [fol. 1354] I concluded are wholly used in the service of the people in Brooklyn, and the other portion namely, the transmission mains, are devoted to the use of all companies. I find that the distribution mains and services equal 83% of the total of the property in the street, and there is 17 per cent of the total of the property in the street represented by transmission mains. I took that 17 per cent of the franchise tax and allocated it to each company on the basis of their proportionate use of the transmission mains, measured by the ratio of 79.18 and 20.82, that is, upon the assumption that the transmission mains exist and are used by the Brooklyn Union Company and the subsidiary companies, too. I know if the subsidiaries were not in existence, it would be necessary to have a transmission system and if the subsidiaries were not in existence, the Brooklyn Union would have to bear all of the burden which is now put on the subsidiaries. I am engineer enough to know that there would have to be a transmission system just the same. I do not allocate any portion of the distribution mains to the subidiaries. I answered the other day that they get gas through them, and on the other hand the gas came back from the subsidiary companies distribution system. The gross earnings tax is not an allocation that is based on the gross earnings tax for which the Brooklyn Union

Gas Company becomes liable by reason of the revenue received from the subsidiary companies on the business of the subsidiary companies. I arrived at it in this way: I took an estimated figure for the manufacturing cost, to which I added the estimated overheads, I multiplied that by the number of cubic feet that I presumed they will take, [fol. 1355] and applied the gross earnings tax at the rate of 5 mills on a dollar to that revenue. I arrived at the Federal Income Tax in this way: I first assigned a certain amount of property as being used by the subsidiary companies and figured a return on that property at the rate of 8 per cent. In order that the revenue received might yield 8 per cent, I must calculate the Federal income tax for which we become liable by reason of the receipt of that revenue. I took the total revenue to be derived from the subsidiary companies through their use of Brooklyn Union property, and calculated an income tax on that and charged them for it. They paid for that in the 21 and 26 cents, but as it turned out at the end of the year, the Brooklyn Union Gas Company was not liable for income tax at the same rate at which I charged the subsidiary companies, for two reasons: One of them is that they did not make the same rate of profit on their other properties devoted to the use of the people in Brooklyn at the $1.15 rate, and the other reason is that there are certain allowable deductions in figuring the income tax rate, which I did not take into consideration in charging the income tax to the subsidiary companies. I do not mean that $1.15 did not yield 8 per cent on the value of the property. These figures and factors I used are simply my assumptions and they are all in evidence here. I do not pretend to testify as to values. I am simply stating that I took certain figures and arrived at certain results. I also took a return upon the properties used in behalf of the subsidiary companies, and determined that for the Newtown company the return on our fixed capital should be 9.37 cents, for the Flatbush Company [fol. 1356] 9.33 cents, and for the Fourth Ward Companies, 11.69 cents. I will have to begin back in order to state clearly exactly what I did do. I will begin back with what I did in 1920. I have got to go back that far in order to get a start, for this reason: I have taken all the way through, the book cost of the fixed capital of the Brooklyn

Union Gas Company. I thought it was the reasonable thing to do. I thought it would be reasonable for the consumers of the subsidiaries to pay a return not alone on book cost, but on the sums represented by that book cost. It figures out very conservatively. Taking into consideration the property as it stands and its cost on the books, those sums representing the value of the property distinct from the fact that they appear on the books. I say that those sums of money, irrespective of whether they appear on the books or not, are very conservative figures as representing the cost of the property as it stands, because I think the book figures represent a very conservative value on the property that is used. I am fairly familiar with values. I have accounted for million of dollars worth of buildings. I would not say a word about franchises. I have no knowledge of the value of franchises, and I did not charge the companies a cent for franchises. My knowledge of other values exceeds our knowledge of the value of franchises. I took as my base the valuations which appeared upon these books of the plaintiff corporation as the cost to them. I selected them because they were the figures stated on the books to have been the cost of that property and I wanted to charge the subsidiaries the cost. I wanted them to support that portion of the investment that stands on the books. [fol. 1357] I thought that that showed the investment of the company and I thought it was right and just that the subsidary companies should pay a return on their portion of the property that was used in their service, on the cost as stated on the books; that is exactly the figure I took. I don't think it would be unfair to have the subsidiaries pay a return on the cost of reproduction. I didn't use it because I was taking the figure which I thought was fair under the circumstances. I did not say the other was fair; I said it would not be unfair to do it. I was only after a unit and if I increased the property to reproduction cost, my unit would not be increased. It would not have the slightest effect on the operating expenses of the Brooklyn Union. The consumers of the subsidiary companies would then be paying a return upon the cost of reproduction of that portion of the property used in their behalf.

As to how I developed the cost of the properties assigned, I took the Brooklyn Union Gas Company's books

from 1895 down to 1909, included in one account and grouping all the different items of property after 1909, that is, during the Public Service Commission's Uniform System of Accounts, the various items of property are segregated. Then, in order to determine for myself a separation of those classes of property that are grouped in this plant account, I think it is, I divided that account on the basis of an inventory of the property made in 1919 by Colonel Miller. I did that for the purpose of getting ratios of buildings, apparatus, holders and that like that were included in one account, but always sticking to the total book figure, and since that time, since I made that relationship, I have added [fol. 1358] the increment in the books to that particular class of property. Col. Miller made the inventory up. I worked on it myself at the time it was made. They made it in 1919, as of October 1st, he went out and counted the physical pieces of property. That inventory is not one of the books of record of account of the Brooklyn Union Gas Company. That is an inventory made by Colonel Miller in the last rate case in the Federal Court. He has got the valuations. In this inventory there were the figures of Col. Miller expressing his opinion as to the cost of reproduction but he made two valuations in the same inventory and he appraised it once at 1914 prices, and he appraised it once at 1919 prices. What I used was the inventory. I got the figures that I say were the book cost from the books, not from the inventory. The only use I made of this inventory was to apportion books costs. I made no use of the dollars at all. I took no figures from that. I simply used that as a basis. I only used the list of articles and the properties and used that simply as a basis for apportionment of the figures that stood on the books and I did not digress from the book figures. Then I got my start on divisions of property, and from that I worked down through the years on the basis of increment from the books which showed as to the different classes of property. Col. Miller in this inventory divided the properties as between the subsidiaries and the Brooklyn Union. He did not show on his inventory the relative use that was then being made of these items of property on October 1st, 1919. He showed the whole property irrespective of its use. I brought these dollars on the [fol. 1359] books of the property down to date. I simply used that inventory for one purpose and then swept it away,

it was no further use to me. I used the items of property shown on the inventory but took the figures from the books; then I started with the land. That inventory does not show what properties are owned by these several subsidiaries. There isn't a thing about the subsidiaries in that. I had in front of me Col. Miller's inventory which did not show the ownership of the properties as between the Brooklyn Union and its several subsidiaries, but I did determine that ownership or ascertain it somewhere. The source of my information was from the location of the property itself. Col. Miller's inventory was an inventory of Brooklyn Union property. There was no subsidiary company on Col. Miller's inventory and there is no subsidiary property on the books of the Brooklyn Union Company which I used. Then I took first the land and took the book cost of land, divided between the land occupied by gas works, land occupied by holder stations and then the other land and divided it in two sections, one section being land on which buildings stood devoted entirely to the Brooklyn Union uses and the other being land on which buildings stood that were devoted to the general use of all companies. I did not eliminate any land whatever that was carried on the books. I have assigned every piece of land that is on the books. This is the way I assigned the piece of land opposite the Equity Works. I have added in my calculation to the book cost of the Brooklyn Union property the investment of the Brooklyn Union Gas Company in the stocks and bonds of the Equity Company, and I took the Equity Company as a gas [fol. 1360] plant and divided it on the ratio of Col. Miller's appraisal, including buildings, machinery and that like. That doesn't help me, where the tin cans are. As a matter of fact, I did not treat that particular piece at all. I did not include it in my figure. It is in my book figure. It is some place in this investment of the Brooklyn Union Gas Company in the securities of the Equity Company. It is included in the book figure that I had, the investment of the Brooklyn Union in the Equity securities. In my figure I have not selected a tract of land on the opposite side of the Equity Works that is vacant. I disregarded entirely, as the figures show it, the existence of any land, in this way, that the investment of the Brooklyn Union Gas Company in the Equity securities which to my mind is the best measure I could get of the cost of that property to the Brooklyn Union

Company; I divided that, I grouped that, rather, with—that is, we took the securities that the Brooklyn Union bought at the time they acquired it. The Equity was acquired later. The par value of securities is $500,000 but those securities cost the Brooklyn Union Gas Company, according to its books, $568,000 so that I have included as the measure of the value of the property at the Equity Works $568,000. That $568,000 I added, in effect, to the plant account of the Brooklyn Union Gas Company, divided it that way, to the exclusion of land. That includes the land opposite the Equity Works. Then I have land in our plant account. To that extent, I don't know what use is being made of that land. I have it included in my figures as being used and useful. I have a portion of it allocated to the subsidiary companies. [fol. 1361] I have on my books a figure which represents our fixed capital accounts down to December 31, 1908 and then a separate set of fixed capital accounts from January 1st, 1909, down to date. I took figures in those various accounts, and called them book costs. It is our Fixed Capital Account as shown by my books. I don't know whether or not the opening entry of the Fixed Capital Accounts came from the vendor company's books. It was the opening entry that was derived from the journals of the Brooklyn Union Gas Company. I am taking the Fixed Capital Account. The last ledger will show it. The Public Service Commission's report will show it clearer than the ledger, because you will have to turn pages in the ledger. I did not eliminate from the real estate any lands; I took all the land. I did not seek to determine its usefulness at all. I took the book cost of all the land, as of the last date here, December 31st, 1922. I did not allocate the two tenement houses down on Gold and Plymouth Streets at all, because I did not consider them. They are probably in my book cost. I didn't allocate them all to the Brooklyn Union. I did this: The Plant and Patents Account in which these buildings would appear, if they are in there, and I assume that is where they would be, I distributed that Plant and Patents Account. I do not know whether it would go in [fol. 1362] with the buildings or with the plant, but in any event I took the sum total as represented by that Plant and Patents Account; first divided it into its component parts, as near as I could, and then subdivided that on the basis of

its use. I do not know whether these tenement houses are any part of our plant or not. That is in the books. I know what they are. They are some tenement houses down on some land down there. The land on which they stand, I treated as holder station land. I am not sure where the buildings were. Probably in the Plant and Patents Account. I made no eliminations at all. Every dollar of fixed capital has been treated that is on the books. I allocated the property of the manufacturing plants on the basis of 79.18, but the plant in the plant account there, or what we call plant, generally refers to the apparatus—gas making apparatus, and that like. Some of that, of course, is at the holder stations. As to those pieces of apparatus at the holder stations, I divided that between the Fourth Ward and the Brooklyn, on the basis of that 92.14 ratio. Colonel Miller made no allocation.

The manufacturing plants are divided between the Brooklyn Union Company and the subsidiaries upon the basis of sales, that is, I used the same ratio of 79.18 for the Brooklyn Union and 20.82 for the subsidiary companies. The land at the holder stations, I allocated that upon the percentages of 92.14 and 7.86 and the mains. I first divided between transmission mains and distributions main and then apportioned the transmission mains on the basis of 79.18 and 20.82, but no allocation was made of the distribu- [fol. 1363] tion mains. Services and meters were allocated all to the Brooklyn Union. Tools and implements were divided on the basis of about 90 and 10. I took half of the tools and implements and applied it to the Brooklyn Union Company alone and then I allocated the remaining half on the basis of 79.18 and 20.82. It varies; tools and implements, both at the plant and in the distribution system. Tools that last more than a year, ordinary small tools like small wrenches and that like are charged to expense, but such tools as, for instance, a derrick out in the street or one of these machines that are used in connection with automatic air hammers, and that type of equipment. I had no figures or calculations to go by, and I concluded that most of the use of those tools of the Brooklyn Union Gas Company was for the Brooklyn Union business of itself. The subsidiary companies have like equipment of their own. All of the tools and implements that are in the works would

be allocated on that percentage; that is the practical effect of it. All the tools and implements that are used in the distribution department, would not be used by the subsidiaries. I have taken the first 50 per cent and concluded that was all useful in Brooklyn and the other 50 per cent I concluded was used for the benefit of all. I couldn't tell what percentage of our tools and implements are used at the works. To get a proper allocation for them, any more exact than I have, I think I would have to know the nature of the tools and implements. An allocation based on my ratio would be unjust for the reason that the greater use of those tools is made by the Brooklyn Union Gas Company [fol. 1364] for its own use. I can tell generally what the tools are. The compressed air machines, and then pipe cutting and threading machines in the distribution shop; we have made more additions to our mains in the territory of the subsidiaries than we have in the territory of the Brooklyn Union Gas Company, in recent years, so that use of air machines would be greater for the subsidiaries than it would be for the Brooklyn Union company, if tools and implements consisted entirely of that type of machine. The machine that is used for cutting out pipe measurements in Brooklyn for installing work on the premises of consumers in Brooklyn would be used almost entirely for Brooklyn. For cutting out the services for the subsidiaries, they have a machine of that kind in Newtown, in Flatbush and I think there is one of that kind in Jamaica; I am not sure. It is hard to run your mind back on what other tools and implements are covered by it. I would say, for example, a wagon loader, an automatic wagon loader. It is hard to describe them, all the tools you will find around a gas plant, big tongs and big wrenches and stuff like that. It is proper and just that they should be allocated in accordance with this basis, any tool that is used at the works. I cannot tell how many tools that are used for the Brooklyn Union alone and that led me to adopt 50 per cent of the tools and allocate it to the Brooklyn Union Gas Company alone. I had no mathematical basis to work on, I just made that assumption and I probably would have been more particular about it if it had been an item of great importance, but it only amounts to about $2,000 in money. General equipment I [fol. 1365] allocated in the same way. That consists chiefly

of automobiles, furniture, desks, calculating machines and all items of that kind. I allocated that 50 per cent first to the Brooklyn Union alone, and then the remaining 50 per cent on the basis of 79.18 for the Brooklyn Union and 20.82 for the subsidiaries. As I say, I had no mathematical way of approaching it except that I knew generally that this equipment was used to a very great extent in the Branch Commercial offices of the Brooklyn Union Gas Company. The laboratory equipment, I allocated just on the same basis as the works and franchises I did not allocate at all. I assigned all the value of the franchises to the Brooklyn Union Gas Company. The reason I did not allocate the franchise value between the subsidiaries and the Brooklyn Union was because I thought it was properly devoted entirely to the benefit of the consumers in Brooklyn. It states "Franchise" and I understand that is what the company paid for its franchise. That is as far as my knowledge of it goes. I had the definition of "Franchise" in my mind, but I cannot think of it now; generally the right granted by somebody with the power to grant, to a company to do business. That is what I should think it was. That is the reason I did not allocate the franchise, the one that is entered on my books and which is shown opposite the figures of $3,050,000. It was because I thought it just simply covered the right of the Brooklyn Union Company to be a gas corporation and I could not see how the subsidiary companies benefited by the Brooklyn Union Gas Company's investment in franchises, that is, in the right to be a gas corporation. That is [fol. 1366] the figure that I did not allocate. I used Col. Miller's inventory on which I based an allocation. I didn't know that he made division of land between the works and the holders, the general offices, or the branches, or non-gas property and I did not adopt it.

J. I. Blanchfield

Redirect:

I have calculated the effect of apportioning repairs of mains of the system. The result shows that had I apportioned them on the basis of the 77.58 per cent of the repairs of all the mains in the system, I would have added to the Brooklyn Union expenses about $17,000, that is, it would have cost the Brooklyn Union more had I apportioned those

repairs to all of the repairs of mains. Gas storage is a part of works cost. It includes the cost of labor employed in operating the holder stations and principally the coal used for taking steam for the purpose of heating the holder cups during the winter, that is the labor and such material as there is operating the holder stations—the holder themselves. I have calculated the effect of apportioning that. Had I apportioned it on the same basis, that is, had I taken it out of works cost, where it is, and apportioned it, that is 77.58 per cent, I would have added to the Brooklyn Union Gas Company's expenses about $25,000. I have actually apportioned some distribution expenses and have made a calculation apportioning the capital employed in storage, transmission and pumping. The result of that calculation shows that had I apportioned all of the capital [fol. 1367] employed in the system, I would have added to the carrying cost of property about $36,000. That is to say, by that what I mean is this: As the books now stand, The Brooklyn Union Gas Company is carrying about $8,500,000 worth of capital of that type. Had I apportioned the system, disregarding the ownership, I would have apportioned to the Brooklyn people about $9,000,000 in capital, so that the effect of it is this, that had I apportioned the system, the Brooklyn Union customers would have been relieved of the necessity of paying about $36,000 for carrying costs on property, assuming an 8 per cent return on that property. Comparing that $36,000 with the figure which would have been added to the Brooklyn Union costs by apportioning the main repairs and the storage, it is about $5,000 less. I have calculated the effect, based on the 1923 figures, if the situation of the Brooklyn Union and its so-called subsidiaries were reversed in any year, instead of the Brooklyn Union, for instance, selling 77.58 and the subsidiaries 22.42, the percentages were reversed so that the subsidiaries sold the larger figure and the Brooklyn Union the smaller. I have taken facts just the reverse of those in evidence and used that reversal as the basis of a hypothetical question to meet his contention that it is improper to make an arrangement at the beginning of the year. His contention is that it should be left to the

end and then a retroactive charge made. I want to show how little effect a complete reversal of form would have.

Objection overruled.
Exception.

[fol. 1368] I have made such a computation. It makes a difference—that is the sum realized by charging the blanket overhead results in falling short of paying all of the charges by about eight-tenths of a cent per thousand.

J. I. BLANCHFIELD

Recross:

By this I mean, that when we resolve the charge into cents per thousand that if the demand varies the total charge will vary with the demand, that this blanket overhead is added to every thousand cubic feet. In all of this series of computations that I have just recently made, I have made one based upon the actual percentage ratio at the end of the year applying it to the actual expenditures I incurred in the year 1923. My answer is that Exhibit 258 shows a credit to the Brooklyn Union expenses for amount paid by the subsidiary companies as their share in the expenses apportioned amounting to $541,679.25. The difference is mathematically $56,190. If I wanted to correct the charges at the end of the year and base them on actual ratios existing at the end of the year on the actual expenditures in 1923, I would not have to surcharge the subsidiaries with $56,190, because if I disturbed the arrangement at all I would go into that Federal income tax overcharge. I made that figure of $56,000 by subtracting $541,679 from $597,869. I got the figure of $597,869 by assigning the expenses actually incurred in 1923. I haven't got the total [fol. 1369] amount here, but I have here amounts assigned on the ratios of the experienc of 1923.

My actual general expenses that are apportioned in 1923 were in two divisions, one being $1,131,620.14 and store expenses at the works, reading from the ledger $17,143.35. I have as $19,143.35. I will account for the $2,000 difference between the books and your computation for that is one of the reasons why I was unwilling to approve this, this entire computation, because I had not had an opportunity to check it. It appears now that you called my

attention to an error of $2,000 between the work that was done by my clerk and the sum that appears on the books. I had not made the computation; my clerk did it. This is not another computation. The pencilled figures on this exhibit are not my figures although those particular figures are in my handwriting, copied by me from the data furnished me by my clerk and as to which I have not as I said before, had an opportunity to check. Relative to the charge that I was going to make the company in 1924, I said that I did not want to testify regarding it because I had not had an opportunity to check it. I said this morning that I thought that I would not make any change in it, and I still say so, even though I have not checked that figure, because I know almost by instinct, from knowing my business, whether or not the situation has so changed as to warrant a change in the prices. When the exhibit was introduced the pencil marks were in there at that time. It has not been changed since then, not a thing been changed. They are already in evidence. I made some [fol. 1370] computation in reference to allocating all of the repairs to mains. I made that allocation on my own thought first because I was asked a question that got me thinking of that subject. I do not recall exactly what I was asked but I know it planted the thought in my mind as to what the result would be if I tried it, so I tried it. I was just checking back as to how this thing worked out on your theory that gas flowed indiscriminately through sub-company mains as well as Brooklyn Union mains, so when I was asked the question to explain why I omitted repairs to the mains in the distribution system. I thought I would make an allocation of it. It took me about ten minutes to make it, I guess, or less. Counsel did not ask me to make the allocation. I have not made an allocation of the automobile expenses. I did not devote any of my time to that. That would take more time than I had. I have not made an allocation of the promotion expenses. I did not devote any time to that and I have not devoted any more time to allocating the expenses for 1924 so as to make permanent my tentative figures. I have been devoting such time as I had to the distribution of mains.

J. I. BLANCHFIELD

Re-direct:

Most of the lead pencil figures in Defendants Exhibit 46 that is, those parallel/ing the typewritten figures for 1922, are copied by me into that book from the working sheets of my clerk in the office. Defendants Exhibit 46, consists of data which I prepared to take with me on the stand to expedite your testimony.

[fol. 1371] Brooklyn, N. Y., April 2, 1924.

THOMAS P. PAYNE

Cross:

On December 31st, 1922 the Brooklyn Union Gas Company had 87 automobiles and on December 31, 1923—120. In 1922 they had some horses. I could not say off-hand how many. We disposed of them during the year. The disposal of our horses accounts for our getting more automobiles.

The moneys which are represented by the contingency account are not segregated and kept in a fund in cash; there is no fund, just a reserve account on the books. I assume the money which that fund represents is in the plant and not in materials and supplies. I am familiar with the resolution. The resolution provides no charges shall be made except by order of the Board of Directors. There was never a five cent piece of real money in the fund, to my recollection or my knowledge. All of our accounts are made up of five cent pieces. There has been money in all of our accounts. There never has been a nickel in our contingency account. That is, the fund never existed physically as a fund, but, being a bookkeeping entry, stopped right at that point as an entry. There has never been any money in our Accrued Amortization Account. That consisted of an entry in the books only and no physical fund ever existed. Surplus is the difference between your revenues and your expenses. There isn't any separate account called surplus which represents real money in a bank.

The Account Contingencies, represents just exactly what the resolution calls for.

[fol. 1372] The reserves, as a rule, on a balance sheet are considered part of our surplus. I have our capital stock,

our reserves and surplus and the reserves are always on the liabilities side of the balance sheet. When I speak of net profits, I have to take into consideration that the reserves would only be considered in case the company was liquidated. Then, after I got rid of our quick assets—our current assets, and our current liabilities—I have left our fixed capital, our capital stock, our reserves and surplus. The reserve has not any effect on the profits of the company in any given time, for the simple reason that it is simply a reserve based on a certain number of cents per thousand that is credited to this account, and the revenue of the company is not affected in any way by that credit. That is, the net worth of the company at the moment of liquidation would not be changed, but, the amount of money available for dividends, if you choose, payable out of net profits, is ascertained by regarding these items as liabilities, to be first deducted before you arrive at the amount of net profits available, for example, for dividends, after a liquidation took place. These are regarded as liabilities to be taken out before you arrive at the determination of net profits available for dividends, but, that is part of the calculation. The charge that has been authorized by this resolution, Defendants' Exhibit 38, is not now included in my showing the cost of producing gas. It appears in the books of account of the company which are in evidence.

[fol. 1373] If we had an insurrection or if we had a riot or anything else covered in the resolution, and any expenditures were made in connection with these items, the charge would be paid for out of the cash and the account would be marked as a debit against the contingency reserve; but I only can assume that. That is what the directors did—assume that.

To record in my books a transaction if a loss occurred of about $5,000,000, due to an insurrection or a riot—in the first place, I would have to get the notification from the Board to charge it against this contingencies account. The other side of the books would of course have to show the credit to the capital account for the loss. Your books up to that point are clean.

If it was so decided, to rebuild the plant that had been destroyed, all expenditures against the plant would be charged to capital and a credit would be made to the cash

account. I have no opinion as to how the cash would be obtained.

I don't know that by capitalizing additions to plant has ever been done. We have issued bonds to capitalize our expenditures made in prior years for fixed capital. According to the Public Service Commission law, I understand the requirements for an order to a company to issue bonds is to submit a schedule as to what they have capitalized in a given period and the permission is given from the Commission, if it is agreed upon, to issue bonds up to the amount that the company can issue.

Our company has made an application to the Public Service Commission to issue bonds, setting forth in our petition [fol. 1374] that during a period of years we have added to and extended our plant with an expenditure of a certain amount of money. Certain expenditures for additions and extensions to our plant had already been made. We had expended the money for this and then we asked permission of the Public Service Commission to issue bonds. We call that in accounting practice capitalizing as expenditure for additions. How to capitalize extensions or additions means making an application to the Public Service Commission for expenditures already made. I do not remember whether or not that may be done before the Public Service Commission.

Referring to our contingent fund set up pursuant to this resolution of the Board of Directors, assume that a loss occurs by reason of one of the contingencies nominated in that resolution to the extent of $5,000,000; in the first place, the Company has to withdraw from the books the property that has been lost. That reduced the capital account of our company. The next would be that, if I was so directed, I would charge it against the Contingencies Account. That would be on the opposite side of the ledger and reduces that account and then the effect upon our balance sheet at that time would be nil, the net worth to the corporation would remain the same.

Assume the Board of Directors determine to rebuild and to expend $5,000,000, the money has been expended, the first step would be to get the cash with which to make the ex- [fol. 1375] penditures. The capital accounts affected would be charged with those expenditures. Now our capital ac-

count is back where it was before. The cash account would be credited with the amount of money expended, and that leaves the balance sheet the same. Our balance sheet has not been changed. The only change that occurs in our books now is that this reserve account set up in the discretion of the Board of Directors by this resolution has been reduced $5,000,000. That is the only effect. And it remains now, for the Board of Directors to determine whether they will authorize us to make any further entries in that account to replace the $5,000,000 that have come out. They may do it or may not, and until the authorization is given, no entries are made in there.

Assume that this $13,000,000 has been invested in plant and now that the plant has been destroyed on account of insurrection or riot, if such was the fact and the amount of the loss represented the amount of the reserve, the first step would be to clean up the reserve. It does not make any difference whether the loss is $5,000,000 as you have just described, or whether it is $13,000,000, the process is just the same, the capital is lost. But, if bonds are issued in order to obtain money with which to rebuild, that fact would not lead to an entry in this contingency account. The account would still remain depleted by the extent of this loss.

[fol. 1376] Brooklyn, New York, April 7th, 1924.

JANES H. JOURDAN

Cross:

The Altantic Refining Company offered under date of October 20th, 1923, to contract with our Nassau and Williamsburgh Works to furnish them with oil at a price of 4.5 cents per gallon delivered. The letter states that the Atlantic Refining Company also agreed to do their own pumping. We declined the offer and we made a contract five days after the receipt of that offer from the Atlantic Refining Company with the Standard Oil Company of New York at 4.8 cents per gallon, and in that case we had, in a measure, to do our own pumping, not altogether. That is, the Standard Oil Company have refining plants adjacent to our Williamsburg plant, and they pump oil right di-

rectly from their tanks into our plant, in that instance. At times we have been getting this oil under this contract by pumping it from the Standard Oil Works to our works. We have always been doing it—not the entire contract, but just as much as they can conveniently pump to us from time to time. I am sure that we have done it for a number of years. I am familiar enough with the method of delivering oil to our various works to be certain of that. If Mr. Atwood testified that that had not been done within the last couple of years, I think he would be mistaken about that. I am confining myself to the Williamsburgh Plant. We did [fol. 1377] not accept the offer of the Atlantic Refining Company because of the large sized cargoes they wanted to deliver, which we could not conveniently take. They only wanted to deliver it to the two works, the Nassau and The Williamsburgh, but we could not do that; we could not limit ourselves to delivery to any one works. That is, they had to deliver to all the works. They couldn't deliver to those two works because it wouldn't meet our requirements. Their cargoes were so large that we would have to have our tanks empty upon the arrival of the boat. They wanted to deliver too much oil, in lots from 500,000 to 750,000 gallons at one time; we could not take it. We ordinarily took 200,000 or 300,000—150,000; it varies with our requirements. They would deliver it in any quantity we wanted. We didn't have a place to store it, with our tanks empty upon the arrival of the boat. If the boat failed to arrive, we would be out of oil. If we had sufficient gas-oil storage to take this delivery, this would not be an advantage under the circumstances, to enter into the contract or accept the offer, because we had the advantage of all the storage capacity of the Standard Oil Company. Their tanks were just as much a part of our plant as our tanks; they were right adjacent. This would involve the building of additional tanks at our plant, and there is not sufficient room to do that. The storage at the Nassau Works is 765,000 gallons and at the Williamsburgh Works, 1,456,000. That is only [fol. 1378] about one-third of the quantity that can be stored at the Williamsburgh Works alone, and that was too much oil for us. We could not accept any such quantity as that. I don't know anything at all about their oil. I don't know the kind of oil that they supply. We did not make any

inquiry about it, any tests of the oil, because the contract did not interest us. I knew that we could not accept it at all under those conditions. We could not accept those large cargoes. So we turned it down because they required too much oil and we did not require it. They couldn't have delivered at the other works on account of the depth of water. We did not suggest to them that they could deliver to the other works if they had lightened their load by first delivering to the Nassau and the Williamsburgh. I presume it could be done, but we did not go into that phase of it at all. The Atlantic Refining Company does not deliver oil to the Consolidated Gas Company, to my knowledge. I have not learned since their offer, that they made a contract with the Consolidated Gas Company. The knowledge of the contract dated January 11th, 1924, between the Atlantic Refining Company and the Consolidated Gas Company of New York has not come to me in my investigation of oil to be purchased for our company. This was only mailed in January, 1924, this year. The fact that the contract the Consoliated Gas Company entered into with the [fol. 1379] Atlantic Refining Company had never been brought to my notice before January, 1924. This is the first time I ever heard of it. I saw it in the evidence in the Consolidated case. I thought it was only a trial cargo, a small quantity of oil for experimentation over at the Astoria plant. I saw it in the testimony in the Consolidated case the other day. 20,000,000 gallons is not a little more than an experimental quantity. That is for the Astoria Plant. That is for the Consolidated Gas Company, the Astoria Light and Power Company. It goes to the Astoria Plant of the system. I know that from the testimony.

It happened in the past that when attention has been called to a contract for a lesser price of gas oil we have gone back to the Standard Oil Company and called their attention to the fact that oil has been purchased by some other company, and then negotiated with the idea of getting a reduction in price. The last time that we did that I think was several years ago. I do not recall now. It was not a question of price the last few years, it was a question of getting oil, but we do not have that difficulty now. The Atlantic Company is not trying to deliver too much to us, They only offered a limited quantity, a small quantity of

oil, delivered at a particular works. We could not confine ourselves to that with anybody. I have forgotten now [fol. 1380] what we asked them for in our letter. (Examining papers.) We asked them for a contract not exceeding 85,000,000 gallons. There was no mention of any particular works and deliveries to be made in tank barges to any of our gas plants. That is not more of an advantageous contract than we made. I don't know anything about their deliveries, and I can not limit myself, as I said before, for delivery to any one particular plant. We can not set aside to take a cargo today here, and a cargo to-morrow there. We have to have a supply subject to change of conditions at every one of our plants in the City. And then the Standard Oil Company, building on that 85,000,000 gallons or more, would make a different price if we reduced the quantity. If we took less oil they might, give it to us cheaper, but I don't know if they would or not. I do not think they would. I think this price is about a quarter of a cent cheaper than ours. Their offer on from thirty to forty million gallons of 30 degrees gravity is 4.5 cents, and then they offered from 30 to 36 at 4½ cents, and our contract is for 28 to 32 Baume. I don't know whether the 30, to 36 gas oil is a better gas oil than the 28 to 32. I have not used any of that particular refinery. I have not used the oil of the 30 or 36, but ordinarily the 30 to 36 Baume gas oil is a better gas oil than one that runs 28 to 32. They offered us a gas oil from 28 to 34 Baume [fol. 1381] at 4¼ cents. I did not make any extended investigations or conduct any negotiations any more than is shown by the correspondence, with the Atlantic Refining Company subsequent to this offer. We just simply disregarded it because they could not handle it at one time. I did not ask them to deliver any less quantity to us. We never negotiated with them further about it at all; that is all the correspondence. I am real anxious to get the oil where I can get it the most advantageous, as cheapest in price for a limited number of gallons, but I am not going to upset our whole business conditions and jeopardize making gas for the City of Brooklyn for a few thousand gallons of oil at any price. This was cheaper in price for a small quantity of oil, of course, it says so, but I did not make

any further investigations about it. It would be very bad business practice to have accepted that contract. It is bad business practice for a corporation to tie up with people that would have been unable to make the contract or that have been unable at any time, which they have been unable, to supply us oil when we were in dire need of it, which they could not do. I have never done any business with them for that reason, we could not do business with them, they could not make us a price that we could entertain. Despite the fact they offered us gas oil at a lower price, I did not conduct any further negotiations with them. I am not interested in oil at any price [fol. 1382] under those conditions. We have to consider more than the mere matter of price on a single contract. That is not a favorable price upon those conditions. Any price is not favorable to us where a man is going to deliver only five or six hundred thousand gallons. I don't know whether they frequently change them. It has happened a good many years ago that we got the Standard Oil Company to change their first offer by subsequent negotiations with them; it has not happened recently. In the event the Standard Oil Company made us an offer, we would always negotiate with them a little further to get a better offer, one that is more suitable to our requirements. It is business practice. After we have made a contract it is very rarely you can get a man to change a contract. Whether I accept the first offer they make to us depends on whether it is advantageous or not. If not, I go to them and try to get a better offer. I did not go to the Atlantic Refining Company, and there is no reason why I should. As to whether it would be an advantage for our companies to be able to take large cargoes of oil, that means creating a plant somewhere where we could have 25 or 30 feet of water, which is an impossible proposition, because it means transferring the manufacturing plants to an entirely new site. We can not shift around and move our plants to accommodate the delivery of material, particularly one item of material when we have always been [fol. 1383] able to obtain prices—I have positive knowledge that our prices have always been most advantageous and have been as low and sometimes lower than those

obtaining around the Manhattan district. It may be an advantage to have our plants located where oil can be delivered to us in the large tank steamers, but not necessarily so. Our experience has been that we have bought it in small size steamers just where we are located at the same price or on equal terms or with equal advantages as we would have been able to buy it in any location any place, except these occasional cargoes you speak of of spot oil, a few gallons now and then, and we can't do business that way. It is practically spot oil, with the limitations, with certain deliveries; it is equivalent to spot oil. We would have to sandwich it in with our regular contracts. They offered to deliver oil to us over a period of a year. That is not technically spot oil, but it is only a spot in the conduct of our business, though. I was connected with the Fulton Municipal Company prior to the consolidation. A short time after the consolidation or the purchase of the vendor companies, I became one of two engineers, and I was in charge of the Fulton Municipal, the Citizens, the Metropolitan and Brooklyn, all four of them. Col. Benson was in charge of the manufacturing at the other plants, and naturally, I frequently used to go to the other plants. I had supervision over the manufacturing at all of the plants in 1907. * * *

[fol. 1384] The officers of the subsidiary companies are Mr. E. R. Chapman, who is President of all the companies, all the subsidiaries; Mr. A. F. Staniford, vice president; [fol. 1385] Mr. Wogan, Mr. McGowan and myself Directors in all of the companies. Then we have two additional directors, I think, in the Flatbush—Mr. Wellington and Mr. White, and all of the directors of the subsidiary companies, are either directors or officers of the Brooklyn Union Gas Company, all connected. Our company, the Brooklyn Union Company owns absolutely all of the stock of the subsidiary companies. I guess all of the bonds of the subsidiaries. The Directors of the Brooklyn Union of 1906, who are living now are E. R. Chapman and myself; I guess that is all. Mr. David G. Leggett, Mr. William Rockefeller, and Mr. William G. Rockefellow are dead. Mr. Chapman is alive and I became director in November, 1910. Mr. Pierpont did not become director until 1915. They are all new directors. I guess that list is right. Mr. E. R. Chapman is the only

survivor of the Board of Directors of 1906 or 1909. In 1917, Mr. Chapman, Mr. Pierpont and myself are the three living directors; that is, the directors living today who were directors in 1917. We always have plans of the works taken when I was engineer, showing the layout of the plants. I don't think we had any drawings of those in 1895 or 1896, showing the buildings, not as far back as that. The earliest drawing we have was some years after the consolidation, I think some years after the formation of the Brooklyn Union Gas Company.

I don't think we have any such data showing the plan of the plants that were taken over at the time of the consolidation in 1895. I don't know of any such drawings. I don't recall of any pictures being taken at times. You don't take [fol. 1386] a picture, you take a number of pictures. You have various plants in the course of construction, alterations of charges, and we keep taking photographs of the plants. I think in a measure I took some of the plants, but not all of them. I have those over in my office. As President of the Brooklyn Union Gas Company I work personally for the subsidiary companies as well as for the Brooklyn Union Gas Company. Some of my time has been devoted to the electrical end of the Flatbush Gas Company. There just happened to be a spurt recently. We have entered into a contract to sell it. That involved quite a little negotiation. I think we have sold it to the Brooklyn Edison Company. The deal has been closed between the two companies, dependent upon the approval of the Board of Estimate and the Public Service Commission. I think in making up an estimate of the cost of gas to the subsidiaries they use the general office accounts, and I think that includes everybody's salary. That is my recollection of it. It is apportioned off in that way. Whether in that allocation any account is taken of the fact that the Flatbush Gas Company has an electrical department as well as a gas department, I don't know as to that detail. That is up to the auditor, and I think Mr. Blanchfield went through those figures for me. He explained them to you and I passed on them and O. K.'d them in a general way. I understand them, I think, except as to detail. I think my own salary is in the General Office Expense. All the General Office Expense, my recollection is, is allocated to the different Com-

[fol. 1387] panies in proportion to their consumption. A proportion of the expenses, a certain percentage of the expenses is apportioned to them. The method that was used in making the allocation between the Brooklyn Union Gas Company and the subsidiaries of all of its charges—to begin with, my instructions were to charge the subsidiary companies with the actual cost of gas at the works, to be determined, and then charge them a return of 8 per cent upon the book value of that part of the plant devoted to making gas for the outside companies, and all that is involved in that; and then with regard to general office expenses, which would include all the administrative expenses, as we administrate those companies, regulate them and look after their business; that would be apportioned in the general office expenses, wherever that was. The properties used in the interest of the subsidiary companies were allocated upon the theory of 8 per cent upon the book costs. We had another group of expenditures, such as general office expenditures, administration and our miscellaneous expenditures, insurance and things of that kind. They were allocated upon a percentage theory. I got the percentage by taking the proportion of gas that each company takes. You have 100 per cent to start with, and taking the officers of the company—that covers all the ramifications of the system. Now, if a company takes 7 or 8 per cent, then that proportion is charged to them. I think probably 21 or 22 per cent of the gas made, was made for the subsidiary companies, and that [fol. 1388] is apportioned off to them. This allocation was made by Mr. Blanchfield and a letter was written to me in January of last year. He explained the allocation at that time, and he went over it with me, and at the next meeting of the Board of Directors, I submitted it to the Board of Directors and a resolution was passed on my recommendation charging the subsidiaries on that basis. I can not tell a thing about the item of automobile expense and office furniture, how they were allocated. I presume they went into the general expenses, general office expenses, upon the relative consumption of gas,—that would be my presumption. The automobile I have in mind is that automobile that is working for both companies, not the whole automobile expense of the Brooklyn Union. I do not mean to convey that idea. If an automobile is running between the two

companies, then, I think it woud be fair because that is using regularly for that purpose. If it was used occasionally, I do not think I would consider it at all. Automobiles are used for the purpose of taking meters from the meter shop out into the territory of the subsidiary companies. If those cars or a car is used continuously in the service running back and forth serving Brooklyn Union and serving the other companies and is in regular operation, I think in that event that it should be allocated, and on the [fol. 1389] other hand, if it is only an occasional trip out there, if we have cars that are working on the 12th Street Repair Shop or in the ware-house mentioned on Fulton Street, regularly assigned to that department and used in Brooklyn almost exclusively or the major part of the time and occassionally take a load out to Flatbush or out to Newtown or Richmond Hill, I would not think it would be necessary to charge that or allocate that expense. Each company has its own cars. I think all the subsidiary companies have a car or cars. I don't know how many, but they have large expense, and they use those more or less, I take it, for the conduct of their business, and I take it that at most our car service or cost of oil or upkeep of our cars, if I might express it so, will be a small item. I am not discussing the item, but the fairness of it between the two companies, and so far as it would affect me in passing upon this method, I would not consider it for a minute. I will tell you now the automobile in which I ride is only used occasionally to go out to Flatbush. My salary is allocated, I presume about 20 per cent of it. I don't know whether the salary of my chauffeur or any chaffeurs who transport any of the officers—are allocated as between the subsidiaries and the Brooklyn Union. I assume they are in the general expenses. If the salaries of the general officers are allocated [fol. 1390] upon the basis of the consumption of gas, I think it is right and just that the salary of the chauffeurs should be allocated. It is, in my opinion, right and just that the expense of operating the car in every respect should be allocated, in technically the same way. It is my judgment that the desk and the chair, the office furniture which I use, should be allocated the same as my salary is allocated. There is no reason why the desk and my chair should be allocated 90 and 10 and my salary 80 and 20 per cent. I agree

with counsel that it should be, but I do not consider from a business standpoint, from the amount involved, that it would affect my judgment one bit upon recommending to the Board and urging them to adopt the process here. It is an infinitesimal amount. I don't know how to figure it. In other words, I did not go through the allocation with sufficient detail to know the amount of these various expenditures. I treated it as a lump sum proposition, as it were. I don't remember when, but I asked Mr. Blanchfield to make up figures upon which to charge the subsidiaries for the year 1923, and he sent me a letter dated January 24, 1923 (Defendants' Exhibit). He wrote me that letter in response to some request by me for an allocation to make between the subsidiaries and the Brooklyn Union Company, and that resolution which was passed was passed after ob- [fol. 1391] taining this letter and his explanation of the allocations to me. That allocation was in effect during the year 1923, I believe. I think Mr. Blanchfield explained to me that he had estimated the amount of consumption of gas, or the requirements of the subsidiaries in the year 1923. I think he predicated that upon the previous year's business, the last information that was at his disposal. I do not recall that he told me he had also estimated the increase in the expenditures for 1923 under these items over 1922. He might have done so, but what I would be guided by would be on this (indicating letter). I had a similar letter, I think, in the year prior to this or information on that subject for the year 1922, and had the same knowledge of what it was based upon as I have of this letter. And then he makes a recalculation on the same theory on the same basis for 1923, and it comes so close to his previous figure that I think his judgment is very good as to what it was for 1922 and what it was for 1923, there is no difference in the figures. I think he charged the same rate for both years, 1922 and 1923. I do not think the fact that the ratio of use or requirements between the two had increased would make any difference. It might make a slight difference. It might make a minor change, but if they had 20 or 21 or 22 per cent, that would vary, but it would be unimportant.

[fol. 1392] As to whether or not there was any system by which I made the correction at the end of the year; whereas this charge to the subsidiaries was based upon the anticipa-

tion that they would use such and such a proportion of our gas, and it now transpires that the anticipation is not in accordance with the fact, we see that they have used more than we anticipated—I would think it was hardly necessary to make that adjustment. I am speaking now from experience. We start off with charging them for whatever the gas costs per thousand. That is known month by month, only determined as it does transpire, as time passes, the other thing being from knowledge of the method we have used in previous years. At the beginning of the year we fix the other charges for the use of the capital, we make the best estimate we can, taking advantage of our past year's experience. That may be shown to be 20 per cent. of the amount of property in its entirety. The estimate is the estimate of the quantity of gas which will probably be used by the subsidiaries during the ensuing year. We find then we have been going ahead and making charges according to that system, and at the end of the year we have never made that adjustment that you speak of, but we have made that charge year after year, and it comes so close to the same figures, that is 1922 is made on the same formula as used for 1923, and we made no changes and there have not been any adjustments for those years, and I think I am safe in [fol. 1393] saying that the figures for 1922 bear out what was charged for 1923, and I do not think there would be any adjustment to be made. There may be a slight variation. I see what you have in mind, and I think Mr. Cummings has, but as long as we only charge a certain proportion of the gas that they take from us I do not see how we could go far wrong unless we have a phenomenal increase or an unusual decrease in business, but it is going along pretty even, it may vary one or two per cent. We charge first the subsidiaries with the cost of the gas as made and in making that gas we use a certain amount of gas. I think that we should add to the cost of making the gas a charge for the gas which we use in making that gas. Not as a matter of fact that we have, but it is so small an amount, it costs probably $5,000 or $6,000, and if I had known of it I would not have corrected it. As to a good reason for basing this allocation upon an estimate rather than upon actual experience at the end of the year, we have made the estimate for so many years, and we have found it to come so close to the figures

from year to year; if we make it this year, predicated upon last year, and the figure comes out approximately the same, it proves the accuracy of our charge without any adjustment, and so on from year to year. Now, that whole charge is predicated upon an 8 per cent. return upon book costs, and a little error one way or the other, if it figures out 7¾ or [fol. 1394] even one-half per cent., we are not going to correct that 7¾ or even one-half per cent; that is a degree of refinement I do not think is worthy of consideration. Now the same way with reference to all these minor items you speak of; whether they send out one or two per cent. more or less, we arrive at it by the same calculation; 21.3 per cent. or 21.5 per cent. consumption, I would not bring that to the Board's attention, because next year it may be one-half of a per cent. over or under, and if you make the correction for all past years, while I am only guessing, I think we would practically substantiate our estimates. Suppose you made a computation at the end of the year, using that same method, but using actual figures showing actual consumption and actual expenses showing a difference of $81,000 in favor of the subsidiaries as against the Brooklyn Union Company, when you speak of subsidiaries, five companies, $81,000, that is negligible, because next year it might be just the other way. Having estimated for the divisor, technically he should also estimate for the dividend, that is the items of expenditure, but as I said before several times, we find the difference is negligible, that is on the system, and we used the very system that we use today, our method of calculation and our formula has been proved by a number of years experience to be equitable. I might say [fol. 1395] any variation to be a quantity or an amount which would not be negligible, if it was recurring for a number of years, any variation would be taken notice of. If the proper allocation to be made is $80,000 more, the consumers of the Brooklyn Union Company should not bear that expense instead of the consumers of the subsidiary companies; there is no question about that, irrespective of amount. I think there is a profit in the New Business Department. Of course I don't know. That is pretty hard to determine. I think I have had figures from time to time, but I have never been convinced of the accuracy of the conclusions as to whether there was or was not a profit. There is a great deal of work of the general business of the company

thrown into that department. I mean to say that we do not have any separate definite expense or anything pertaining just particularly to that one department, the New Business Department. We have a manager and several assistants, and two automobiles. We have our gross price of our appliances, and our net sales price—all those separate. I think I must have at some time called upon the head of the New Business Department to advise me as to the question of whether it is being run at a profit or at a loss within recent years, but I do not recall it now. I call upon him for everything I can think of, and that must be among [fol. 1396] others. Just what it is I could not say. If I told you yes, I could not tell you what it was. Speaking of this line of business as a department, I do not regard it so that I allocate to it a rental of space occupied and all the clerk hire that may go into the works or the handling of the merchandise, and treat it as a separate entity or branch of the Brooklyn Union Gas Company. The New Business Department is getting new business, that means selling the appliances and stoves and ranges and so on. That is so closely interwoven with our other expense accounts that we have no means of keeping them apart; it is almost inseparable. A separate corporation such as The Brooklyn Union Appliances Company could be formed. Of course we could conduct it the same as any other business is conducted, and determine then whether it is operated at a loss or at a profit. The advantage of doing what we are, is the close touch we get through it with our consumers. I think the closer we get to everybody that uses our commodity, the better it is for all concerned, and that can only be done by the company. That is the reason why we pursue that course. Of course you could have a lot of inter-corporate companies of that kind within the circle, every branch of the business, if you wanted to. The disadvantage of doing that is you would [fol. 1397] have to have an organization and have separate expenses and separate rentals and separate apartments, and I think it would cost the company more to do this along that line than it does now. We do not have a separate organization and separate building and the books kept separately—they are all very closely interwoven with the general business. For instance, the appliance man takes out stoves and discusses things with the Chemical Department, and the Manufacturing Department and the Street Main

Department, and they all have relations to each other. If a man in the New Business Department is out trying to introduce appliances that will require volume, he gets in touch with the Manufacturing Department and the Street Department and the Service Department. That could not be done by another company just as well because we would not tie up with them. If we had a separate organization, I do not think we would tie up as close as they do now. I cannot see the advantage of taking over the organization we have now and forming a separate corporation and keep its present location and present employees and the present organization. The only advantage would be you would have knowledge of that particular item of expense which we do not know now. I think our New Business Department is operated at a small profit. I don't know the items that enter into the expenses. I could not tell you that. If we included the rental of just one plant our profit might disap- [fol. 1398] pear. As to any good reason why our corporation should conduct the business of the sale of gas appliances even though the conduct of that branch of the business should result in an annual loss to the corporation, I think the intimate relations between the consumer who uses these appliances and the gas company, that the consumer is better served by that, and we are better informed as to the service given to those consumers. A few years ago we used to charge the subsidiaries with a loss of 8 per cent for unaccounted for gas. I think we were making that charge at the time of the trial of the last case, the Brooklyn against Newtown. I am not quite sure the decision was that the Special Master at that time in his opinion stated that the loss to the Fourth Ward Company should be larger than that which was provided for in your resolution. I thought he considered that the loss should be apportioned throughout the entire system. We did that but I think that is what his position was. There was a slight variation between his finding and our method. I have read and am familiar with this decision. My attention being directed to the opinion of the Special Master relating to that part of his opinion bearing upon the question of unaccounted for gas, it refreshes my recollection as to his holding in regard to that. We subsequently change the method of allocation, that is, the charge for the unaccounted-for gas between the companies, from 8 per cent to a system unaccounted-for. We

thought it was a fairer way of arriving at the unaccounted [fol. 1399] for because the unaccounted for, by charging 8 per cent to the outside companies it did appear that the unaccounted for of the Brooklyn Union Company ran a little below what we would expect, and that continued for some three or four years, and then we fixed 8 per cent, on the theory that that was a more reasonable charge for unaccounted for—that the system basis would be more reasonable than the percentage basis. I think that was done in 1921. This 8 per cent arbitrary figure had been in existence for a number of years, I have forgotten now, and during that period of years I thought it was a fair figure, but I think for several years before we made the change, if my memory serves me right, we made up system figures, and they approximated 8 per cent for the system, that is, for seven or eight or nine years I think, the system would show that — were charging at a fair figure for all concerned. I thought the loss throughout the entire system was about 8 per cent. That 8 per cent in 1921 was a little low for the subsidiary companies. I think our unaccounted for gas has increased in the last five or six or seven or eight years due to handling the gas in the manner in which we do. We are handling it under a higher pressure than we formerly did, and that will account for a considerable difference in the unaccounted for gas. In the last six years, I think six or seven years, if you take the entire system, if you take the entire system of unaccounted for gas, it would [fol. 1400] be up around 10½ per cent, may be 10.6 per cent. I think that is fair. I think our unaccounted for last year 1923, was just about as it has been for the last six years. We realize, and have for a number of years, that there is no possible way that any human being can tell just where the unaccounted for begins and ends—our mains extending into the subsidiary mains, and their gas being pumped back into our mains from their holders, so there is no question in my mind that it is eminently fair to simply treat the unaccounted for by taking the whole system, everybody involved. In my resolution adopting the unaccounted for, for the whole system, it says "The President stated that after a thorough study and investigation of the matter of unaccounted for gas it was evident that the estimate of 8 per cent for unaccounted for gas used in figuring the gas

delivered to the subsidiary companies under the resolution adopted by the Board at the meeting held December 23rd, 1919, was insufficient." I, myself, made the study and the investigation spoken of here through my engineers. I inquired of the engineers, or of the accounting end of it, this has more to do with the accounting end of it, they know more about the unaccounted for gas than the engineers, because the engineers have technical knowledge of a lot of things that the accounting department does not, but to determine how much gas is unaccounted for is a matter of determining how much gas is accounted for and the quantity manufactured, and the difference is the unaccounted for. In that study there we made these figures up [fol. 1401] for five years prior to 1921. I think it was a combination of Mr. Payne and the Engineer of Manufacture, Mr. Bush, who had direct charge of compiling the data upon which I made this thorough study and investigation, and probably my assistant engineer, Mr. Atwood. I think they all had a voice in the consultation, and got together the figures. It was not the written report by each one of these men that was before me. It was just an expression that it should be changed to the system. I do not recall what time the conference took place. It was not a conference. It was probably a number of discussions or number of conferences. It is presumed this resolution was passed shortly after that final conference on the subject, and that it would approximate the data we passed that resolution in board, and I think that was in July, 1921. It probably just preceded that; we made up our minds that we should change that accounting system. That is I did after consultation with Mr. Atwood, Mr. Payne and Mr. Bush. There is no doubt in my mind of it at all; I was convinced of it. All gas men know in a measure about the causes of the unaccounted for gas. We know that gas is unaccounted for due to a variation in temperature and due to difference in pressure in handling it and also that some gas leaks out of the joints. There are numerous causes. Condensation [fol. 1402] in the mains will account for some of it. Where the consumption of gas per mile of main is small, I do not think any of those rules follow that it will have usually a larger loss than one that has a large consumption per mile of main. That is, companies that have large mileage and

just the reverse to what counsel said, would have a small unaccounted for. The Consolidated Company might or might not have as large a percentage as the Bronx Company. I don't think it necessarily follows that the larger gas companies have a smaller percentage of loss on account of the greater consumption. I say that because I consider ours a large company—where a company was much smaller than ours they had a much smaller unaccounted for, and other companies had a larger unaccounted for than we had. Consumption per mile of main has something to do with the percentage. I am not prepared to answer how it enters into it. We didn't touch upon that in our study—we simply took the figures, that is all we could do, we took the figures of the gas we made for several years before we adopted that resolution, and we accounted for all the gas that was sold by all the consumers meters of the subsidiary companies and the Brooklyn Union Company, and of course we estimated the public lighting, public lamps, which is a very small part of our business, that is less than a fraction of one per cent, and the gas used at [fol. 1403] the plants and gas used at the offices, and then there is one missing link, and that is the unaccounted for, and we found generally for some three or four years prior to the adoption of that resolution that taking the whole it approximated closely to 10 per cent of the entire figure. That 8 per cent was simply our idea of a fair figure. The old Fulton, the Brooklyn plant ran about 5 or 6 around that time, or less, and I thought that was unusually low unaccounted for, and it was due partly to the fact that we charged the subsidiary companies too much, that is, 8 per cent was too much. Before then when we charged them 8 per cent, we used to charge 12 per cent, a great many years ago, and that is when we changed to 8 per cent, then when we got to 8, we thought the most equitable plan would be to charge them on the system basis. That came about by education by a number of years of figures. I was led into the same belief that other gas people are, that 8 per cent or 10 per cent is a reasonable unaccounted for gas. That is generally talked of and accepted, that 8 per cent is a reasonable unaccounted for in the old distribution mains before we used high pressure. At the time we adopted 8 per cent as the percentage for the subsidiaries, we did not

have a system figure. I haven't the system figure at the time 8 per cent was adopted for the subsidiaries, but for [fol. 1404] 1915, 1916 and 1917 the system figure varied from 7.68 to 9.09. The 8 per cent was adopted for the subsidiaries in 1909, I think, so that for a time, at least the years as to which I have information, 8 per cent approximated the system figure, and then there came a time when 8 per cent was less than the system figure. The last six years, I might mention that in 1918 the unaccounted for on the system was 10.18; 1919 was 10.01; 1920 it was 11.0; in 1921 it was 10.75; in 1922 it was 11.1; 1923 it was 10.6. That has been the system unaccounted for for that six year period. What led us to believe that 8 per cent was unsatisfactory, or too low for the subsidiary companies, was we found that the unaccounted for in Brooklyn, that is figured on the basis of 8 per cent, it had the effect of producing an unaccounted for for the Brooklyn Union of very much less than that, 5.3, 6.8, 7.6, 6.8, and we thought those were low figures on our general knowledge of the business, and we thought they were charging the unaccounted for in excess of what was the actual condition and that made our figures low because the more we charged the outside companies, the less we make the Brooklyn Union figure. At that time we thought the subsidiary companies were being charged a little too much in that 8 per cent. That was from [fol. 1405] the 12 to the 8, when we changed to 8; we had 12 before that. I think I said that 8% was too high a charge, and I would like to straighten that out by saying any charge is unfair that does not take in the entire system. The reason we thought that was too high was because the Brooklyn system was getting off with a low percentage, and experience taught us that it was altogether likely that their unaccounted for was more than 5 or 6 per cent. It was found that it was more than 8 per cent, that it was 10 per cent the first three years; 8 per cent was low.

"Q. You found that 8% was too much for the subsidiaries so you charged them the rate for the system which is about 11%, is that right?

A. 10 and a fraction."

All this discussion about unaccounted for that we had in 1909 and other year—we tried to arrive at a fair charge for the subsidiaries; at the beginning, in about 1909 or

about that time, and we thought 8 per cent was fair. We simply thought it; never mind why we thought so. We ran along a number of years on 8 per cent., and it showed in the Brooklyn Union figures that they were very materially below that. We thought that was probably due to the fact that we did not charge them enough. In the meantime we were changing our system, going from a low pressure to a high pressure system and, in making a survey for the whole system, we discovered that we did not charge them enough, so we charged them 10 per cent. The only way an accurate [fol. 1406] figure could be determined was by taking the system. All we could do was to analyze the figures for the system as a whole. We did not go into the question of the consumption or the leakage per mile of main, or the location of the meters, the distance of the meters from the holders. We did not go into the question of weather at all, the effect of weather upon condensation. We investigated those by taking the figures as they were reported, and we did not think they were unreasonable. We did not investigate the soil conditions either. My opinion upon the question of the effect of different kinds of soil upon unaccounted for gas is, if you have a loam formation and you have a leak, it is very apt to hold that leak in the mains. If you have a sandy soil or open, porous earth, it will simply escape. We did not go into that at all. That is not a question of any importance. I think changing the pressure in our mains accounted for some gradual increase in the unaccounted for. We increased it at no one particu time; we have been gradually increasing our pressure in order to get gas from one point to another. I think the general practice with most all gas companies, in shifting their gas around, has been to increase their pressure in the high pressure mains, I don't mean in the low pressure mains. I think we have been increasing our pressure in [fol. 1407] the distribution system. I think under the regulations of the Public Service Commission we have been maintaining a higher pressure than formerly was carried, by reason of the fact that so much gas is used for fue. Our losses and the cause for the increase in the unaccounted for gas is due to the increased pressure in our transmission system, and a great deal of our gas is transmitted. I think the bulk of our gas in shifted from one holder station

to another holder station. I don't think sending out this gas through our transmission system at a higher pressure causes these losses. No one element would account for unaccounted for, but it contributes to it. That is one explanation of the probable cause of unaccounted for—that is the principal reason, because we are distributing gas more generally than heretofore. Another explanation is the usual one, condensation, leakage at the joints—I did not say the increased pressure was the sole and only cause of it, but it contributes to it. The leakage and condensation have always existed, and I think it was caused from the increased pressure. For intance, if you have four or five inches pressure on that line, and you increase it to five pounds, that small leak will become a large leak. I don't think we lose more through leaks, but I don't know how much. This loss of gas by reason of the fact that we are sending it out at a higher pressure manifests itself in [fol. 1408] some degree, in condensation. All of the loss caused by condensation, in sending the gas through our transmission system at a higher pressure, would manifest itself by a larger amount of drip oil in the holders. The gas going through our transmission system at a higher pressure and condensing there, we get some of it in the transmission system. I expect that might result in a larger amount of drip oil being recovered. I do not confine it to increased pressure alone, in a single high pressure main. This high pressure main might go through a territory and be tapped by distribution mains. The gas finds its way out through the whole distribution. I don't know whether the condensation is more or less than last year. I have testified that to a large extent I am disposed to account for the increase in unaccounted for gas by reason of the increased pressure. The amount of drip oil that we recover I think would be an indication as to whether or not our theory is correct. I think if we had more drip oil, we would have more condensation. Condensation results in drip oil and condensation is what causes this unaccounted for gas when it passes through the transmission system at high pressure. I will grant that if we did not recover more drip oil, our theory would not be correct.

In making my study for the unaccounted for gas and the [fol. 1409] proper amount to charge the subsidiary com-

panies and also the Brooklyn Union Company,—at that time I knew from the records, the amounts of unaccounted for gas that occurs in the Consolidated Company, the Central Union, the Standard and the New Amsterdam. I had those figures before me. I know about the size of the Central and the Northern Union and those companies—the Mutual and the Standard, but I do not recall that the consumption per mile of main is larger at the Consolidated Gas Company than in our company, the Brooklyn Union Company. I do not know what those figures are. I do not call to mind the consumption per mile of main of any of the companies. I think the consumption per mile of main in New York is a little less than ours. I am simply giving my best recollection. I am having in mind their mileage which I think is less than ours. I am speaking about the Consolidated Company now alone, and their consumption is about the same or a little more than ours. Having less mileage and their consumption being lower, the consumption per mile of main would be a little less in New York. Its mileage is less and the consumption more, the consumption per mile of main would be greater instead of less. I did not have before me the percentage of unaccounted for gas which exists in those companies I referred to, at the [fol. 1410] time I fixed this percentage. The unaccounted for gas of the Consolidated Gas Company would give some indication of a proper amount of unaccounted for gas for the Brooklyn Union Gas Company, for a comparison, but I did not use that as a criterion in my study. You can not use the unaccounted for figures of any one company unless you know all of the details and how the unaccounted for is figured. It is largely an element of bookkeeping in studying the unaccounted for, whether to make certain corrections for certain things, and what method to use. They are obliged to report to the Public Service Commission certain details, and it calls for the make, the kind and amount of gas used, the send-out and sales. Then they are supposed to report the difference between those figures and figure the percentage. I do not know if they are supposed to compute that percentage in accordance with the number of miles of main in existence, giving not only the loss per mile of main but the consumption per mile of main. It would seem that the consumption per mile of main is

reported as between the various companies, but I did not have those figures before me. I do not know that I had any particular figures before me at that time, of the different companies' unaccounted for. But the unaccounted for varies in so many different localities, I do not believe [fol. 1411] you can always figure it by the same method. You take it in some cities it is 2.9 per cent. I have it from the American Gas Association statistics as late as 1922, which is the last, and you will find the unaccounted for varies from a little under 3 per cent. up to as high as 10 per cent. It is not explained why it is 3 and it is not explained why it is 10.

As to the variableness being greater between cities, I can call to mind I think, Boston, for instance. I think Boston is less than 3 per cent. according to their returns. That would make New York look very large. I do not know why they should vary between Manhattan and Brooklyn. We have the same weather in New York as we have in Brooklyn, but of course, we might not have the same weather in New York as we do in Boston, or in Georgia, in Atlanta or in any other city. I can not tell any other element that would make different in the City of New York as distinguished from the City of Brooklyn or the Borough of Brooklyn. I can not tell any element of any city or why it should be different than some other city, nor why it should be different in the Borough of Manhattan as distinct from the Borough of Brooklyn. The weather conditions are practically the same in those two Boroughs. I have seen it in New York, in the Consolidated report in the last case, and I think they showed something like 6 or 7 per cent. [fol. 1412] or something like that; the Mutual in New York showed 10 and a fraction, and I think the Standard and the other companies showed approximately from 9 to 11 per cent. I mean within that range now, between one and two per cent, that same range exists all over. I think Detroit only shows 2½. I think there is something in the details of figuring their unaccounted for, which shows how these people figure it. I assume that, naturally.

I do not know when the transmission system was first built. I do not know what is meant by that. We have a belt, running around from our works to the districts of the subsidiary companies or the various holders. That is

what we call wholesale pumping. This transmission of gas that we pump is delivered at high pressure. I suppose it has been going on piecemeal for a great many years. I do not know how far back it was constructed. Just as we built a section from the Fulton Works, South Brooklyn out to, I think it was, Flatbush or Belmont Avenue, in one of those secions, and then little by little we kept adding until we reached Jamaica, and those extensions have been made from time to time covering a good many years. We were building gradually this loop in order to supply the subsidiaries—not only to supply the subsidiaries, but to take care of the whole general consumption. I do not think [fol 1413] the first portion of the transmission system was built from the Fulton Works. I would have to go way back to almost shortly after the Brooklyn Union acquired the other properties, where they connected the main, I think of the Fulton and the Citizens, or the Fulton to the Metropolitan, I have forgotten which now. As far as my recollection goes that is the first time that we connected those up. That was really part of the system, and subsequently became a part of our transmission system. That all formed part of our transmission system. As soon as we got to Belmont Avenue, that was within the City of Brooklyn, limits and then we extended the main from Belmont Avenue to Jamaica. I do not know that that was the first time we did it, but that is one of the movements we had. I do not know just when we did start that. We never transmitted gas to the subsidiaries before we had our transmission system. We had to have the transmission main to go there. As soon as we took them on we had to have a main connected to their system. In a measure, we did it through the distribution mains. In the Newtown we did that, right from our distributing system. I think we did that in Richmond Hill. That was by extension of mains through the Flatbush Territory. Flatbush had their own holders. We had a main going into Flatbush, and that in turn supplied them [fol. 1414] further east, and ultimately through what we call the smaller system of mains. We have been gradually building up this transmission out to the outlying holders. Before we built our transmission system we were able to supply our own consumers through the distribution system, but we would not be able to do that now. If it were

not for the fact that we had to supply our subsidiary companies. I will give an illustration by taking the main from Brooklyn, from the Fulton Works, that goes up to the Park Slope, if you know where that is, up beyond the Brooklyn Riding & Driving Club. Through that section we had a low pressure, and this main that extends from there on east in Flatbush was tapped at about that point, and let gas out at a higher pressure into that section. If we did not have that transmission main there we would have been compelled to lay a large main from the Fulton Works to that section. That serves a dual purpose. It supplies the gas to that immediate neighborhood and also to points beyond. If we did not supply the subsidiary companies, we would then build a loop as it were around in our own territory, but as it is now we have built our loop out into the outlying territory. I could not say whether the transmission system is more in their territory than in the Brooklyn Union territory. The last section of that was laid from Newtown to Jamaica, I think. That is a stretch of about five miles. [fol. 1415] That was completed I think last summer, 1923. I could not say how much is outside and how much in Brooklyn. That is the longest stretch in the outside territory. As to the unaccounted-for of our company, comparing favorably with that of the Consolidated Gas Company—the percentage of loss I will put the other way, that it might be the same. I cannot see any reason why their figures can be much lower than ours, any more than I can see why our figures can be much lower than theirs; and following that further, I don't see why New York should be twice as much as that in Boston or Detroit. That may be because we do not know the local conditions in those cities, perhaps. In a general way I am reasonably familiar with the conditions that exist in Manhattan.

I did not make any study of the loss which is occasioned by street lamps when I was making my study of unaccounted-for gas. I should not think there was an unusual loss in connection with street lamps; if there is I know nothing about it—it is a very small part of our business. The fact that we are selling the gas to the City, that is lighting the street lamps, I do not think has anything to do with our unaccounted-for gas. I do not think that is a real factor. It may be more or less. We recently built a new

10,000,000 cubic foot holder, for the Newtown Gas Com-
[fol. 1416] pany. We agreed to pay 8 per cent. on the cost of construction plus taxes and maintenance and all expenses of operation, and then aside from that pay the bills of the Newtown Gas Company as they fell due in the construction of that holder. The Newtown Gas Company does not use any of the new 10,000,000 cubic foot holder. They do not need it in their territory, if that is the way you want to put it. They do not get gas from it. They can if they want to, because it is on their premises. They can take it if they want to but it would not make any difference. The holders are connected and I do not know just which holder they take gas out of. They get gas from one or the other. It is immaterial to us. They might be using that holder as well as any other holder that we have. There is another 10,000,000 cubic foot holder also on the same premises, and they are charged with that. But we are charged with the use of part of that other holder. There are two holders. They charge us with part of one and the entire or whole of the other. A part of one holder and the entire expense of the other holder. Those are the only two holders they have. The Fourth Ward Companies do not have any of the holders. They use these two holders, too. We charge the Richmond Hill, the Woodhaven and the Jamaica with the use of one holder and part of the other. I sup-
[fol. 1417] pose we do. It is in our calculations, the calculations of Mr. Blanchfield, that in the holder construction and the holder use we charge the Fourth Ward Companies I think it is five cents a thousand more than we charge the other companies that have holders. In that charge there is included the 10,000,000 cubic foot holder and part of the other 10,000,000 cubic foot holder at Newtown. I think all of one and part of the other is in that charge. No. 1, part of that and all of No. 2. I think that is the way they are numbered. No. 2 is of recent construction. I think all of that, the last one, is allocated. All of the new one is not allocated to the Fourth Ward. It goes to that expense. It is for the holder use. I mean that a portion of the total expenses of the holder—not the total expense of the holder. That is figured in with all the other holders. That is just as much Brooklyn Union Capacity as one here in Degraw Street. It is my impression that we allocate that rent of

the Newtown Holder to some other of the Fourth Ward Companies. We pay rent there but I do not know what the amount is. We have a contract covering it. We pay whatever the contract calls for. It is my recollection that the rental there is $92,800 a year. The Newtown owns the other holder or owns part of the other holder. In fact they own the entire holder of one and we think it is only fair [fol. 1418] that they should only bear that proportion of it that they use for their business. The two holders are of course on their premises, as I said before, but it does not make any difference who takes the gas out of it, because they only bear the proportion that they use, though both holders are on their premises. It is part of the first holder. That is my recollection of the proportion. Both holders are on their property, and both holders belong to them; and on one they charge a rental and on the other our figure for rent is computed as 8 per cent. of the cost of construction plus the maintenance charges. That is taxes, insurance and all the maintenance charges and cost of operating. They share operating expenses on one and they rent the other. In the first place, they have a 10,000,000 cubic foot holder, which is in fact more than they require for their business, and they rent to us part of that holder for which we pay a regular rental. Now, the other holder of 10,000,000 cubic feet capacity, when we want an additional capacity of holder, the Newtown Company built that on the assurance from us that we would lease it from them so it would be no burden and no expense on their consumers, and we leased that property from them on a cost plus basis, cost of construction, of maintaining and interest on investment, because that gas was to be pumped back to Brooklyn. If we [fol. 1419] were not supplying the Newtown Company we would have to build the holder ourselves on our own land, and in that event we would have it in the Brooklyn Union capital then, but by this arrangement, we paid for it as it came along,, as the charges accrued, and then we are paying 8 per cent. on the cost. The holder still belongs to them, and while we paid for it, they owe us the money. They would not build a holder for their own use, and the only way we would have of building a holder of that size, which was the most economical at the time they built it, would be on the expectation of renting it. We advanced

them the money and they pay us six per cent. interest on that, and then we rent the holder from them. Then we pay 8 per cent. on the investment—on the cost of construction. They never complained to us about that arrangement—it is so perfectly equitable they would not.

I recall that in 1917 our company was carrying two reserve accounts covering contingencies, one of which was included in the account called Accrued Amortization of Capital, and the other account called Depreciation and Contingencies, and we passeed a resolution severing the Accrued Amortization Account and creating a new account called Contingencies; then transferred to the new account called Contingencies that portion of the account called Accrued Amortization of Capital which was intended to cover the contingencies. Also we passed a resolution calling at- [fol. 1420] tention to that fact that we had these two accounts and that there might be misunderstanding arising in connection with it, and then we set up this new account called Contingencies. No one particular man drew the resolution. Mr. Carter, Mr. Staniford and myself, and Mr. Dykman had a hand in it. This was back in 1917. Mr. Carter was employed by me then as a consultant. He was not a specialist on contingencies. I employed him for a number of years in a consulting capacity. He was an expert accountant. I think he was one of the best posted men in the gas business in this part of the country. I don't know how much Mr. Dykman did, but I guess he saw it before it was submitted. I don't know what part I contributed. I don't know that I contributed anything. It was done in discussion, as to what we should try to do, what we should draw up to cover that question. I had to draw up probably three or four before I got one that was satisfactory. This was drawn up before the meeting, and four of us were in consultation regarding the proper form of that resolution, I don't want to drag Mr. Dykman in, in the wrong place. I consulted him whenever it was necessary. We had some conference there, relative to the form of the resolution, and there was general discussion among us as to the proper form which it should take, and this form that I selected seemed to be the consensus of opinion of all [fol. 1421] four of us. I understood it at that time pretty

well. I knew that we had been carrying two accounts covering contingencies. On January 1, 1917 there were Accrued Amortization of Capital and Contingencies and Depreciation Account, as all in one account at that time. We had another account called Depreciation and Contingencies prior to that time. I think it started in 1908 or 1909, the other account. Both accounts started on January 1st, 1909, I think. I don't recall now whether the Depreciation was in that account or not. A new account called Contingencies was opened up July 1st, 1917. That account was divided, and part of it went into Amortization of Capital and the balance into contingencies. A balance of $10,138,046.78 was taken out of Accrued Amortization of Capital and transferred to Contingencies, leaving in the Accrued Amortization of Capital account $262,967.22. Then there was transferred from the old account designated as Depreciation and Contingencies the sum of $1,603,232.68, wiping that account out, and that sum was transferred to this new account called Contingencies.

I was the only director present when the resolution referred to above was formulated by the four men. Mr. Dykman, Mr. Carter or Mr. Staniford were not at that time directors of the company. I read the resolution after we formulated it, to the Board of Directors. I had been president and director of the company seven years, since 1910.

[fol. 1422] The Accrued Amortization of Capital account was opened in 1909. That is one year prior to the time I became a director of the company. At the time it was opened I knew nothing about the account, and the purposes of it. The Depreciation and Contingencies account had also been opened in 1909, and I didn't know anything about the purposes of that account. I noted, or it was called to my attention, that each one of these two accounts made provision for contingencies. There were two accounts set up in 1909, one of them called Depreciation and Contingencies, and the other called Accrued Amortization of Capital, which included Contingencies. At the time they were set up in 1909, I didn't know the purpose of those two accounts. I cannot say whether they covered separate classes of contingencies or whether it was the same contingencies covered by two accounts. I don't know whether

Mr. Carter or Mr. Dykman knew. They did not discuss what the directors intended or must have intended in 1909. Mr. Payne was auditor of the company in 1917, I think. Mr. Gilmer was auditor of the company in 1909. I am mistaken—Mr. Gilmer was alive in 1917. I will stand corrected on that. This resolution is not a reserve; it is an account, that is all. Setting up an account, recognizing that that much money would be set aside for that account. [fol. 1423] It was practically a surplus account; it might just as well have gone into surplus account as to have gone there; it was setting up that much money for that purpose. The account was to cover loss by earthquake, insurrection, or riot, among other things, as mentioned in the resolution. We were going to use the money for losses occasioned by those things. In case we had a loss by earthquake, we were going to use the account to cover that loss by earthquake by taking it out of that or out of our surplus. We would consider that simply a bookkeeping account, that is all; just the same as the surplus account. There is no difference between contingencies and surplus. I don't know the purpose of it, when it was first set up. I don't know what the purpose of the original account was. As far as I know, there has been a change in the purposes of the reserve, to set aside an account representing earnings—I mean the purposes nominated in that resolution, that is all. They had no discussion as to the purpose of the reserve, except the general idea of setting up an account representing earnings. It might just as well have gone into the surplus account as to have gone in there. That is always recognized, the same as the income. We have always paid taxes on that, the same as any other income; it belongs in the same category. When I read the resolution, there was discussion in the Board of Directors on all resolutions. I do [fol. 1424] not recollect any discussion that we had with our Board of Directors, except as to its contents, comments upon it, the fact that the Board of Directors came to feel that in matters of that kind they had been paying a very moderate dividend to our shareholders over a period of 28 years—6 per cent, and if they wanted us to put it back in the plant, let us put it in there, and we put it into the plant. It was in the plant and for the benefit of the shareholders to do that. The Accrued Amortization of Capital account—

we are setting aside now a cent and a half. We thought it equalled our renewals and replacements at the time we set it up. It did not equal them—I think it will fall short of last year. I don't know about two years ago, but I think it will fall short of last year. I don't know what the balance is without looking up the records. I think it increased some up to two years ago or probably one year ago. December 31, 1922, Accrued Amortization of Capital was, as per this report to the Public Service Commission, $931,258.93. That represents really a surplus over and above the amount over and above withdrawals, which we have made over a period of years—an accumulation against withdrawals which we have not thus far made. We are having withdrawals all the time. I think last year was a little more than usual. We are going on with this other construction work now, espe- [fol. 1425] cially at the Citizens Plant, and prior to that time when we initiated this program of construction, the cent and a half covered our normal withdrawals slightly, I think. I have forgotten now how much. We charge or credit this account when a piece of property is taken out of commission. We cannot tell whether this amount of money will be utilized in a few years from now. It will be necessary to have that. It is my impression from the results of last year, that we should increase that reserve. It is only a cent and a half now, which is extremely modest compared with other companies. They have a larger reserve than we have, I think the Consolidated has a reserve of three cents. They are charging them right into renewals instead of repairs, and that would make some difference, and I think ours may increase rather than decrease as we go on increasing our plants. We would not charge a renewal to repairs, or vice versa. We own a piece of land at the Citizens Works. The City has the right of eminent domain; the right to extend a sewer through it. It has the right of eminent domain, and it has an easement for a strip of land there for a sewer. I don't know whether the City condemned the easement or not, but a great many years ago there was an arrangement made between the old Citizens and the City, giving them a right to construct that sewer right through the property. I believe it did condemn the easement and paid the company for the sewer easement. It acquired the right of way across the property where the

[fol. 1426] sewer is, but we have always occupied the property above it, we always have since they first came upon the premises. I don't know what legal right we have to use the ground above the sewer. Part of the sewer collapsed. I did not have anything to do with the negotiations between the City and our Company when this sewer collapsed, but the figures were submitted to me. The Engineering Department had charge of that. I don't recall now the letter from the City to our Company stating the cause of the collapse. I think there was a letter written—by the City to us. I always thought my father had a wide knowledge of the gas business, in a general way. He used to know quite a little about the Brooklyn Union Gas Company, and the mains and the services were passed on up to him by others. As to the statement of June 30th, 1900 that many of the mains and service pipes are forty years old and far gone by rust and electrolysis, I could not question that. It was made by the general over his signature. It states in this affidavit that in the computation of values at least 20 per cent should be allowed for this loss by rust and electrolysis, also that the average length of the service pipe was 35 feet. I don't know anything about those statements. My father at that time was president of the company. In 1900 I had charge of the Western Division, a part of the [fol. 1427] system. That is twenty-three years ago. I made an affidavit in connection with the present case for the purpose of the motion for the interlocutory injunction. As shown on Schedule A, I stated in this affidavit that the investment of the company amounts to $48,964,119.87; that is, in its own property, property of the Brooklyn Union Company, as distinct from the subsidiary companies. That is the capital of the Brooklyn Union, including the working capital for the subsidiary companies. It includes that portion of the fixed capital of our own plants, which is used to make gas for the subsidiaries, but it does not include any of the fixed capital of the subsidiary companies. I got that figure from the books, and the cost figures as shown in the books mean the investment of the company. I think withdrawals could be deducted, not from any figure. There is no figure mentioned.

Mr. Carter was employed by our company in 1923 and 1922 up to the time of his death. He did not make charges

at the rate of $7,500 per year. He made a single bill out. I retained his services for consultation, and he rendered a bill for 1922 for $7,500. I thought that was reasonable and paid it. He rendered another bill for 1923, which I also thought was reasonable, and I think I paid that, but the records will show. He acted in a consulting capacity, for our company. We discussed every phase of our case, how [fol. 1428] to develop business and general matters like that, policy and things of that kind. He was one of the best informed gas men in this part of the country. Our instructions were to consult with him on the question of adding up accounts or opening up accounts or such things. I consulted him about the present gas case, about everything. I consulted him about the prior gas case too. I also consulted him about the whole general matter pertaining to the company's position and its affairs, its relations with the Public Service Commission, its relation to any public matter pending. There were constantly ordinances passed and other measures before the Legislature and elsewhere that we had to discuss—how we would present our papers, present our cases—get together and talk it over. I consulted him not only about these gas cases but also about matters that came before the Public Service Commission, matters that came before the Legislature—all matters, but I did not consult him about any definite matter. He did not represent me directly before the Public Service Commission in court on any matters. He never went to Albany to represent our company. We always represented ourselves. He did not advise particularly as to how this case or any other case should be conducted; but he would tell us about his experience and his method of handling business of this character and any other character that he was familiar with. He had had very wide experience, had a [fol. 1429] long experience, for several years, with the Consolidated case in New York. I did not consult him about the method of making gas. He is not an engineer. He was an accountant. He is Vice-President of the Consolidated Gas Company. His specialty seemed to be gas business generally. The manufacture and the distribution of gas had nothing at all to do with that phase of it. Just as — would consult the Consolidated's engineer, we would hire a man for consultation on anything. I did not con-

sult him on any engineering propositions, but I say in a similar situation, if we have a difficult piece of engineering work we consult an engineer. I could not tell what I consulted him about in the accounting end of our business in the past year or two. We might talk to him about the system of accounts, the difference between the old and the new system of accounts—this new system that was adopted the first of this year. We had a great many conferences on that. Not on the accounting end of it, personally, but I think Mr. Payne did and I think Mr. Blanchfield was in some conferences with him, and Mr. White, if I mistake not, and other officials, upon the relative value of the old system as compared with the new system. We were glad to have assistance of that kind. After he pointed out the advantages of the new system over the old, I did not go before the Public Service Commission and suggest their [fol. 1430] adoption of it. The Public Service Commission I think submitted a form to us which was the result of their own working out and we accepted it. I am speaking about this new system of accounts now, that went into effect the 1st of this year. He was retained principally to give me information about his experience. I might say it was more particularly helpful to me as president of the company. I could assign other people to consult him and talk to him about these various technical matters. For instance, on the accounting end of it, because I am not an accountant. Mr. Payne and Mr. Staniford are, and they consulted him repeatedly about the way in which the books should be kept, more than I did. On accounting generally. Not how they should keep this or that, because Mr. Payne was well versed in those matters, as to how the books should be kept. It is not a question of bookkeeping. As to what Mr. Payne consulted him about in accounting practice, I can not tell anything more than that he talked to him about the apportioning I think of the contingent accounts. I think that is one of them, probably. I think he has talked to him about how we computed our franchise taxes, which is a very complicated piece of accounting. I do not think Mr. Blanchfield consulted him about the allocations, the charges between the subsidiaries and the Brooklyn Union. I never heard that he did. I do not re- [fol. 1431] call now how long Mr. Carter has been employed

as a consultant—maybe five or six years or 7 years, I should think. Maybe longer. I consult Mrs. Dykman about these litigated matters. * * *

Mr. Cummings: I renew the offer of Defendants' Exhibit No. 30 for Identification. Defendants' Exhibit No. 30 for Identification is received in evidence.

[fol. 1432] The Brooklyn Union Gas Company

Brooklyn, New York, April 9th, 1924.

THOMAS P. PAYNE

Cross:

The next item of operating expenses on my sheet is taxes assignable to gas operations in the real estate taxes that covers all of the real estate that is owned by the Brooklyn Union Gas Company, irrespective of whether it is used or useful for the gas making business. I have in there, the land on which the tenement houses stand. I haven't the data as to the amount of tax on those parcels included in my schedule. It represents the entire amount of the real estate tax bills, together with other tax bills of part, but in that amount is the entire amount of the real estate tax bills rendered against the company and paid. I haven't any information here to separate them. I can get a list, but after I get the list I would have to get in touch with the engineering department and find out whether it was used or useful. I would have to depend upon somebody else for that information. I am not qualified to distinguish whether a piece of property is used or useful or not and have not intended so to testify.

The bill for real estate taxes for 1922 covering Block 2898 Lot 1, the location given as Porter, is included in the taxes on our exhibits, the bill for the year 1922 covering Block 2897, Lot 13 is also included and the bill covering Block 2688 Lot 33, are all included in my schedules. I am not familiar with the properties covered by the bills. I would not identify from the lot and block number on the bill what property is referred to. The amount of taxes on the first [fol. 1433] lot is $27.60, on the second is $345 and on the

bill which I last called to your attention is $27.60. On the bill covering the same parcels for the year 1923 those taxes are included in my schedule for the year 1923. And the amount of taxes in the bills amount to $27.17 and $339.57. I could not tell to what use that land is put by the company. I also included the land opposite the Equity Works.

If there has been a bill rendered for the land owned by the company opposite the Equity Works we paid it and charged it to taxes. I don't know what use is made of that land in the manufacture and distribution of gas. I don't know whether it is occupied or not and I don't know whether there are any buildings on it or not. The parcel on 130 Atlantic Avenue is included also in my schedule. In my gross earnings tax I have included there the tax on excess dividends. I think the excess dividends represents the amount over a certain per cent that we pay. I would have to have the tax bill, to give that more definitely. It is part of the makeup of the gross earnings tax bill. I don't mean to say that it is the excess dividends tax. It is the gross earnings tax that the State requires. It is just a part of the regular tax. It is not separated in any way. The tax also includes the entire income of the company. It takes in all revenues. I cannot tell how much money we derive from our investments, not from that book (indicating). It has to be taken from the ledgers in various forms by taking one-half of one per cent of the gross receipts. It is all set up in the working papers.

[fol. 1434] If I had those working papers here I would not say I could tell, as distinguished from the investments. I would have to analyze all the different items that enter into the tax. Those things are not set aside like a regular little pocket that goes into it. It is a regular standard form that goes to make up the gross earnings tax. I include all the rent revenues. I would have to make a study of my analysis of the gross earnings tax in order to tell you how much revenue is derived from the gas business as distinct from our other revenues.

The Federal Capital Stock Tax—there are three methods formed or allowed us in making up the tas, known as A, B, and C, and the item that we figure the tax on is the largest amount which represents the—I think it is the excess of assets over the liabilities. That is the method that we use,

without going into very great detail on it. Speaking of the Capital Stock Tax we compute it and file it and pay the money. That has never come back on us in any way. It is the method prescribed by the Government. It is right in the form. We can use one of those three methods. We take Schedule A in using the excess revenues, that is, the excess over liabilities. That gives us what is deemed to be the net worth of the corporation. There is no distinction made between the subsidiaries and the parent company. I have included the Federal Income Tax. We made our complete return for 1923 and made one-quarter payment of it and have our receipt for it; [fol. 1435] the amount in 1923 was $385,141.49. That was the actual amount of the income tax as applicable to the Brooklyn Union Gas Company. That is what we computed and paid one-quarter of. In paying the income tax we made a consolidated return. The total income tax for the System for 1923 was $459,802.36. The amount applicable to the Brooklyn Union Gas Company was $385,141.49.

In making up a consolidated return we set each company up in columns and figured the income tax of each one. Then we extended the total, eliminating the inter-company items, making a consolidated statement and paid the income tax on that amount. Then we go back and find out what part of the total tax applies to any of the companies that are subject to an income tax. For the year 1923 the Newtown and Flatbush Companies were liable. The subsidiaries had no taxable income during 1923. Other than those two companies that I mentioned there are many, many deductions allowed by the Federal Government in making up an income tax. I don't remember all the deductions from the income tax. That is a specialist's job in every sense of the word. Ours was made up under my supervision. It is done in the office. It is part and parcel of a big job. I have a copy of it over at the office. We have a form made up in the same manner that it is made for the Federal Government, with about fifty-five schedules that go with it. The income tax is figured on actual interest paid, and I made a deduction for interest on bonded indebtedness. We deducted for all interest paid, that also includes the interest on our consumer's deposits. I don't think there is any division in our [fol. 1436] income tax report as to the operating revenues

as distinct from the non-operating. It is all in one item; operating revenue. That is, our income from both sources is the basis for our tax. It is not divided in any way. This report will not enable us to tell how much is due to non-operating. We would have to make a computation of that too, in order to ascertain that.

Sixty days after the final gas bill has been rendered to a consumer, if it is not paid it is charged off as uncollectible. At the end of sixty days we transfer it over into our account uncollectible gas bills. This figure for 1923 includes some bills which were really uncollectible in 1922 and in the early part of 1924 there will be some bills actually rendered in 1923 which will become uncollectible in 1924, if they are not paid. In a number of cases these uncollectible bills subsequently come in. This represents the difference between the amount that has been charged for and the amount that has been collected. If we have a deposit we always offset that as against uncollectible bills. The amount of the unpaid bills is always charged against the deposit and the interest.

I took off a list of the capital accounts and have that here.

(Paper received in evidence and marked Plaintiff's Exhibit No. 271.)

This fixed capital, December 31st, 1908, shown on the exhibit represents the accounts which were opened up in 1895 and added to and withdrawals made from that time to December 31st, 1908, and from that period on there have been no additions made, to the several capital accounts which are designated "Fixed Capital" December 31st, 1908. [fol. 1437] The Plant and Patents account was initiated by our opening entries in our journals. I cannot tell the aggregate amount in which the Plant & Patents accounts of the various companies were opened in our books; not unless I added them up. Our ledger shows that.

I am looking at Exhibit No. 246, Folio 16, entries made November 4, 1895, in the account Plant & Patents. The total amount is $10,687,853.81. The column headed "Total" in folio 10 of Exhibit 246 represents the amount, or records the amount opposite each of the vendor companies as noted in the account. Opposite the Brooklyn Gas Light

Company is the figure $775,011.91. That represents the amounts set after the plant account in the journal and posted in this account. Plant and Patents is the heading of the page. Opposite the name Peoples Gas Light Company appears the figures $335,164.24. That represents the amount as recorded in the journal opposite plant account. In the journal only the word plant appears, but in the ledger the title of the account is plant and patents. That was true of all of the Brooklyn Gas Light entries.

The sums which are set opposite each one of the vendor companies in the plant and patents account shown on our ledger are as follows:

The Brooklyn Gas Light Company	$775,011 91
The Citizens Gas Light Company	1,419,597 40
The Fulton Municipal Gas Company	2,599,933 19
The Metropolital Gas Light Company	1,212,183 36
The Nassau Gas Light Company	2,126,662 47
[fol. 1438] The Peoples Gas Light Company	335,164 24
The Williamsburg Gas Light Company	2,219,301 24
Total	$10,687,553 81

I stated that in the journal these items that I have just read were entered in "Plant Account," but when posted in the ledger they were posted under the title "Plant and Patents Account." That was an error in answering the question. On page 4 of the journal the account is "Plant and Patents." It is just the same in the journal as it is in the ledger. I do not know whether or not these entries in the Plant and Patents Account which were posted in my ledger as I have just read represent any tangible property. I know what that account was made up of, what physical items. It represents building holders and generators, exhausters and condensers and so forth. It does represent tangible property. Patents would be intangible property, and so there may be intangible property as well as tangible property in that account. I never heard of any patents. So far as I know, there were no patents. That is the title of an account and it was made up of buildings, holders and gas making equipment, which constituted the plants of the vendor companies taken over from the vendor companies.

The Brooklyn Gas Light Company's plant has been dis-

mantled and disposed of. The buildings and the equipment, exhausters, condensers, generators and the coal gas machinery and the water gas machinery; I believe the ground has been sold. That is, that was sold to the Brooklyn Edi-
[fol. 1439] son Company. The office building remains; that is 180 Remsen Street; that is still standing, and the holders at Front and Plymouth Street are still there. I believe there were two, I'm not certain. I could not tell where we have withdrawn from this account for the buildings and the retorts and the generators and the condensers and all the gas equipment, for the simple reason that in those days there was an account called Construction Account and that represented the charges to the plant and the credits to the plant. Any withdrawals that took effect would go through in the credit, but I could not distinguish them without a very complete analysis. We transferred the Construction Account. The Construction Account in those days represented charges and credits which occurred all during the year, that is part of page 11 and extends to page 15.

It would happen this way, that the Construction Account would be charged with all the amounts applicable to construction and the credit side would represent anything taken away. Taken away doesn't necessarily mean withdrawn, I mean it would represent all the credits to the construction account, so that at the end of the year a balance would be struck between the debits and credits. That balance would be transferred bodily to the Plant and Patents Account, which would represent the net additions to the Plant account for that year. That portion of the Brooklyn Plant which was sold and withdrawn does not appear in that Construction Account by way of credits. The sale of the buildings and equipment of the Brooklyn Plant occurred here recently.

[fol. 1440] I have a withdrawal from the Plant and Patents Account in the year 1896 amounting to $538. I could not explain why it is within the withdrawals from the Plant and Patents Account instead of a credit to the Construction Account, except that the item is entered "By cash," and I would assume that that would be for the sale of some scrap material. That scrap material came from the Peoples Works. I have a withdrawal from our plant, or a credit from our plant and patents account in 1899

amounting to $12,650.05. That wasn't a credit to the construction account for the same reason as I explained for the $538. The account is "By sundry debtors." The $12,000 represents a credit to the plant and patents account, which would mean a sale of some material, probably some material which has been withdrawn from the plant. I cannot recall at this moment, what it is. A fire at that plant brings it right back to me. There was a fire at the Peoples Works, and that represents the amount received from the insurance companies as being a credit to the plant account.

At the Brooklyn Gas Light Company plant there was construction work going on from 1895 on. I say construction—I will say there were charges against the Brooklyn Works from 1896 on; debits made. There are no credits for withdrawals in the construction account for the Brooklyn Works for that year. There were no withdrawals so entered in the ledger as I can see. I do not notice any credits to our construction account of the Brooklyn Gas Light Company plant.

In 1899 there is a notation here of $1,650 which looks as though a withdrawal had been made on account of a second-[fol. 1441] hand gas holder. Up to December 31, 1908 there have been no withdrawals in our construction account or in our plant account affecting the Brooklyn Gas Light Company. There has been no entry representing withdrawals from the Brooklyn Gas Light Company since 1908. The account on the books is Plant Account, without any works being designated. I have testified that from 1895 to 1908 I do not note any withdrawals being made. From 1908 to date I will have to analyze the credits to the plant and patents account. Prior to 1908, so far as I know if there were withdrawals they would probably appear as credits in the construction account.

In the case of the Peoples Works where the fire loss recovery was, that is a credit to the plant account. In 1908 there was a credit of $538 for some scrap sold. In the credit side of the construction I do not notice any large withdrawals, and if they are not in that construction account as credits, then the withdrawals do not appear as credits anywhere in the books.

This plant account was called, "Fixed Capital December

31, 1908, Plant and Patents." It was not separated as to plants. I could not look through my items and pick out any withdrawals affecting the Brooklyn Gas Light Company which are recorded in that account.

From 1908, 1910 and 1911 there are no notations made of any credits to the Brooklyn Works. I would not say that was true right down to date, unless I analyzed all the accounts. I want to analyze any credit against the plant and patents account. I will have to analyze all of them. That would be a very extensive job. I would [fol. 1442] not have to analyze the minor ones, I would only have to analyze the ones which amount to considerable money. There is something every month. These books in those days were not handled by me, and I cannot answer that question. They have been handled by me since then and I could and have a*lan*yzed these. I do not recall whether I found anything on my books where a credit had been made for the withdrawal of any of the buildings or machinery from the Brooklyn Gas Light Company plant, outside of the sale of the land.

Referring to the Peoples Plant, I find no entry representing the withdrawal from any property that formerly constituted the Peoples Plant, with the exception of two items, one amounting to $538 in 1896, and the other amounting to $12,650.05 in 1899; those are the only two that I have noticed. The Plant Account of the Brooklyn Gas Light Company was opened in our books in the sum of $775,-011.91. The only property which we have on hand to-day so far as I know representing that account are the holders and 180 Remsen Street.

The Peoples Gas Light Company's plant and patents account was opened at $335,164.24. I could not tell what we have on hand to-day in the way of property that was included in that account of plant and patents. We have the Peoples holder on Skillman Street and that is all I can think of.

The Metropolitan Plant was reconstructed about in 1910, 1911 or 1912. I know they made withdrawals from that plant of the gas machinery. Referring to Journal 9 where [fol. 1443] it shows we withdrew our seven benches and

retorts and hydraulic main in 1910, I don't recollect that unless I see it.

On December 31st, 1910, there appears a credit to our fixed capital account of $289,620.61, and separated among the various plants. The bulk of the item which relates to the Metropolitan Plant is $217,637.50. That figure represents the withdrawal of various equipment from the Metropolitan Works, among which is the seven benches, retorts, hydraulic main and hydrogen scrubber, two eliminators, two oil heaters, two generators Nos. 1 and 2, installed in 1802; also two other generators Nos. 3 and 4, which were installed in 1903, and two Hazelton boilers which were installed in 1892, and the Hoy-Kennedy boilers, two of them, installed in 1872, and it also represents the withdrawal of condensers, scrubbers, blowers, exhausters, meters, purifier boxes, elevators and various other equipment which was withdrawn from the Metropolitan Works. I can only say that we are having withdrawals all the time.

In this account which I have called attention to were withdrawals made from the Citizens Works amounting to $11,810.50. It does not include retorts and generators. Under the same account I have withdrawn from the Fulton Works, $8,475.00. That particular item does not include any retorts or generators. I will not find, on the witness stand, where the retorts and generators have been withdrawn from the other plant. If such equipment has been withdrawn, there is an entry made on the books, as far as I know. If there has been a withdrawal, it is recorded on the books. That is all I know.

[fol. 1444] I would have to go through all of these journals to find that out. If that apparatus, benches or retorts or the generators, were transferred to other plants, a withdrawal would not be necessary, but, I don't think I know anything of the kind. I do not know whether it was or not that the coal-gas manufacturing equipment was transferred to some other plant. On my own personal knowledge, no, I don't know about it. I cannot recollect, whether it has been withdrawn, at this particular time. There is nothing at the Brooklyn Works at all. I don't think there are any benches used at all in the plants, that I know of. I don't know whether they have all disappeared. They may

be some certain place, for all I know. I cannot point out in my books any place where there is an entry representing the withdrawal of the coal-gas machinery or retorts or benches, excepting the Metropolitan Works, unless I make a very complete analysis of the whole thing. I haven't made sufficient analysis of those withdrawals to know there is none and I won't so testify.

To check the analysis of our withdrawals from that account is a job that is too big for me even to assume. It is too big a job and I cannot do it; it is impossible. I haven't seen any withdrawals for any of those meters in this journal in this particular entry that I am looking at. To see it in any of the others, prior to 1910, I would have to page 506 leaves to find that out. There are postings in the ledger from 1908 on—credits to the account Plant & Patents. What it consists of I don't know, and I would have to make a very complete analysis to find out. I have called off the major item now of $620,000 odd. The entry [fol. 1445] itself is fully explanatory. I opened our Plant and Patents account at the sum of $10,787,853.81, up to December 31st, 1908, the net additions to that account were approximately, $4,917,587.42. I haven't made the subtraction. The two withdrawals from our Plant & Patents account amounting to $13,188.05 represented those two items of $538.00 and $12,650.05. Our plant account as of December 31st, 1908, stands today at $14,552,164.32 as of December 31st, 1923.

On December 31st, 1908, the balance in the Plant & Patents account was $15,592,253.18. December 31st, 1923, the balance was $14,552,164.32, showing withdrawals to the amount of $1,040,088.86. There were no additions to the December 31st, 1908, account. After January 1st, 1909, they were all credit. This sum which I have given not only represents the withdrawals of property which was in existence prior to 1895, but it also represents the withdrawals of property which we installed from 1895 to 1908. There might possibly be some apparatus in there that was withdrawn and was represented by this sum of $1,000,000. I have Journal 9 in the account showing the withdrawals from the Metropolitan Works. Two oil heaters, installed in 1903, were withdrawn. The two generators Nos. 3 and 4 were installed in 1900 and two scrubbers were installed in

1900, and the next two were installed in 1903; one blower installed in 1903; one exhauster in 1903; Mayer generator house and charging floor installed in 1903; Steel condenser [fol. 1446] house installed in 1903; The steel scribber 1900; frame carpenter shop and accommodation room installed in 1905; fame cement shed installed in 1907; on that one item it shows that the properties which are represented by the sum which I gave not only represents the withdrawals of property which were in existence prior to 1895, but property which has been installed from 1895 down to 1908. The account could be analyzed to find out the amount which was represented by the withdrawals of property which was in existence prior to 1895 as distinguished from the property which was installed subsequent to that time.

I have no knowledge independent of the report to the Public Service Commission for the year ending December 31st, 1923 of the equipment at the various plants. We have fifty generator sets in our entire plant and of that number two were installed prior to 1896. They are at our Equity Works. We have seventy-four boilers in use. Out of that seventy-four boilers now in use, seven were installed prior to 1896. I am including those two installed in 1896. Five of them were installed prior to 1896, and two of them were installed during the year 1896. We have nine relief holders. Two of them were installed since 1896. Seven out of nine gas holders were installed prior to 1896. We have twenty-seven commercial gas holders; twenty-two of them were installed prior to 1896 and six of them installed since. There are twenty-seven all told, but there is one date, the year built unknown. That means prior to 1895 our meter account was opened in the the various companies at $1,020,919.88. On November 4, 1895 we had 113,067 meters. This [fol. 1447] sum of $1,020,919.88 represented the values of those 113,067 meters and as set up on the books, that is my understanding of it. I have a schedule that I have prepared showing the numbers of meters by years from my books and the number of services. God himself would not know how many of the 113,067 meters which were on hand in 1895 are in use by the Company, and I do not think he will tell. We have installed meters since 1895 to December 31st, 1908 representing a sum of $192,774.55 My ledger simply tells the balance in the account; withdrawals and credits in my

meter account are the same thing, only the balance is represented on the books as the difference between the additions and the credits. It is the balance of the account.

From my books I made a schedule showing the total number of meters and the total number of services at the close of each year since 1895 and the number on hand November 4th, 1895.

(Plaintiff's Exhibit No. 272 offered in evidence and marked. No objection.)

My lack of knowledge as to debits and credits to our meter accounts is the same now as it was previously, every capital account in the books has been written down as necessity arose.

[fol. 1448] The Master: Well, Mr. Payne, the evidence in this case shows in substance that a variety of properties were acquired by this corporation at the time it was organized, and the entries representing those transactions constitute these initial entries in your Journal No. 1 that you have produced here. You are familiar with those entries, aren't you?

The Witness: Yes.

The Master: Now, it further appears in evidence that many of those plants were in part or in whole abandoned and some of the equipment was discarded, some of the equipment was moved elsewhere. Now, can you point out in your books entries showing that where part of the equipment or all of the equipment of a given plant was abandoned, a credit was made either in construction account or in Plant and Patents account or any account, so that the credit would operate against the item of fixed capital?

Mr. J. A. Dykman: May I interrupt the Master to say something, please?

The Master: Surely.

Mr. J. A. Dykman: I don't think Mr. Cummings and I are at all apart—I may be mistaken, we may be, but I don't think so now, from talking to him shortly while you were asking this question—upon what this Plant and Patents [fol. 1449] account shows from 1895 to the end of 1908. I think that I can prepare and make a statement upon this subject which will embrace all that Mr. Cummings can pos-

sibly prove. Mr. Cummings is good enough to appreciate the reasons why I prefer to have this go in this way rather than to have it by question and answer from the witness.

Now, if I may speak off the record——

The Master: Yes.

(Informal discussion off the record.)

Mr. J. A. Dykman: And I would suggest that cross-examination upon this subject, especially in view of the fact that we are to have an adjournment over Friday, be suspended until I have an opportunity to prepare the statement with the care we all recognize it requires; and that if that statement is not satisfactory, then the cross-examination upon this subject proceed.

Mr. Cummings: Well, that is all right.

Mr. J. A. Dykeman: I am confining myself, of course, to the Plant and Patents account.

Mr. Cummings: I assume so. I want to question him about the Meter account and also about one or two other accounts.

The Master: Yes; I understood Col. Dykman to be limiting himself to the Plant and Patents account, and that, as I understand it, does not include meters or these other subjects that you wish to examine him about.

Mr. J. A. Dykman: No, sir.

[1450] Mr. Cummings: No.

The Master: So that branch of this cross-examination will be suspended.

Mr. Cummings: I won't inquire any further into the Plant and Patents account at the present time.

The Master: Not until that schedule is presented.

A variety of properties were acquired by this corporation at the time it was organized, and the entries representing those transactions constitute these initial entries in my Journal No. 1 that I have produced here. I am familiar with those entries. I have certain debits to my meter account from 1895 down to 1908, each year and those figures represent either purchases direct from manufacturers or purchases from the subsidiary companies. As to the [fol. 1451] total amount of debit, that is what I have added to the meter account. In other words, that is the gross

additions to the meter account. My figure does not include anything besides meters. It would be just what it says, the total gross additions to the meter account. There would not be anything in the debits aside from meters, it is just the additions to the meter account, absolutely. The figures representing my additions from 1895 down to 1908 would mean taking every year and making that calculation. Our company never includes in the meter account the cost of installing the meter. We always charged it with the purchase price of the meters and we credited it with meters withdrawn from service, represented by actual withdrawals or sales or transfers. When a meter was withdrawn and not used further, the account was credited with the actual purchase price of that meter and when we sold a meter it was credited, at the purchase price of the meter that was sold, always. By that I mean the amount that we bought it for. There are other credits in that account—bookkeeping credit, when we sold a meter that had fallen into disuse, we credited this account with the original purchase price of that meter. Whenever we sold a meter and received cash for it, the meter account was credited with it; with the amount of cash we received. We have not sold meters to anyone except our subsidiary companies, and when we have sold to the subsidiary companies, we have sold at the original purchase price. As a practical matter, one checks against the other. Meters are not sold as junk, only in the case of condemned meters; the full [fol. 1452] amount of the meter is taken out of the meter account. The meter itself is taken out of the meter account at what we consider is the price of it; that is, what we bought it for and any salvage, that is credited to meters also, so the meter account represents just what we paid for it. We get salvage from the lead that is taken from the meter cases. A meter is worth approximately six or seven dollars. We enter that as a charge in the meter account, say seven dollars, the price of the meter, or 100 meters at $700. A time comes when one of those meters has been condemned; we credit the account with $7 and find that we may sell the remnant of the meter for one dollar, that meter account is not credited with that dollar in addition. The full credit of the meter comes out of the meter account. That dollar would be credited to the meter

account, that reduced the value of the meter. We would have a credit to the meter account of $7 consisting of $7 and one dollar withdrawn. This salvage is very small. I think, as a matter of fact, that on a five light meter we get about 10 cents worth of lead out of it. We have an item of $6,403.09 as our additions to fixed capital, 1895, in the meter account. I couldn't tell you how many meters that represents. My Exhibit doesn't tell the number of meters. $6,403.09 represents four different analyses. That item of $6,000 represents $3,578.74 which I assume from the record here to be purchases of meters. Also $2,276.35, that represents meters purchased from manufacturers. $250 worth of meters was purchased from the Citizens Company or the Citizens branch, and $296 worth came from the Nassau Branch. That is in the nature of a transfer. I take it.

[fol. 1453] I haven't any record here that will show the cost of three-light and five-light meters as of 1895 or 1896, but I have a record in my office that shows the price of all meters that the company has purchased since 1896. I think that is as far back as we could possibly go. It would be an impossible thing to find out, the dollars that represent the meters installed prior to 1895 which are in use by this company.

By taking the account as you opened it, or as it exists today; that is, the fixed capital account of 1908 covering meters as it exists today, and deducting from that the additions from 1895 to 1908, would give you a figure for the number of meters still out on the district, but, I don't know whether it would represent the number of meters out on the district, by any means. I cannot see, why or how you would ever be able to assume that that figure would represent the meters still out on the district. The figure which I have in my exhibit represents the meters on the district or in stock or being repaired or on hand. It represents everything, meters on the district, meters in stock and meters being repaired. My meter account as of December 31st, 1908, fixed capital as of December 31st, 1923, was $1,905,672.34. As a matter of fact this figure of $1,905,672.34 is what is left on December 31st, 1923, of the old meter account, everything is out of it. We have added to it certain meters from 1895 to 1908. It would require a

lengthy analysis to tell the number of meters that we now have on hand, installed prior to 1895. I would have to examine all of the bills, I would have to examine all of the [fol. 1454] withdrawals and work it back. The balance of fixed capital, December 31st, 1908, meters—that is Exhibit No. 248—is $2,307,925.49. That is the balance carried forward from the old account entitled Meters. I originally opened the account at $1,020,919.88. The difference between those two figures represents my net additions. That net addition is represented by an increase in our meters from 113,067 to 336,760. If you should take the Meter Account, Fixed Capital, December 31st, 1908, of $1,905,672.34, and deduct therefrom your additions made to that account from 1895 to 1908, how would that give the capital representing the meters installed prior to 1895. How do you or anybody else know that those are the meters that have been withdrawn. The dollars represent the meters which are in use by the company which have been taken over from the vendor companies. You might have exhausted entirely the dollars which represent the meters which you have taken over, but, you don't prove whether you did or not by that calculation.

I cannot tell the additions from 1895 to 1908, unless I analyze the account. I do not think there is any question about whether any meters installed prior to 1895 are now in use. It is impossible to get the information. Nobody in our company knows whether there are any meters now in use that were installed prior to 1895 or not, unless they have more knowledge that I have. Even if it be a laborious task. I couldn't do it. Each Journal entry of a meter withdrawn will indicate whether that meter was installed prior to or subsequent to 1895 by taking each journal entry of withdrawals in the meter account and noting whether the meter [fol. 1455] withdrawals was installed prior to 1895 or subsequent to 1895, I could in the end have the material from which to ascertain the value of meters now in use, or in use by the company in 1908, which were installed prior to 1895. I cannot tell the amount of fixed capital that represents the meters that were installed prior to 1895, that are now in use by the company. It is not possible, except by such an analysis of the journal entries as just referred to above. It could be done that way, but I would like to add here you

can make an analysis if you had the time and the force, but it is almost an impossible thing to even attempt.

The material is in these books in so far as the dollars and cents are concerned, but it has to be backed up by the bills themselves, which represent the number of the meters. My journal entries and each journal entry noting the withdrawal of a meter carries with is in that entry a statement whether or not the meter thus withdrawn was installed prior to 1895, or subsequent to 1895, but, to complete an analysis of this kind you must have the number of the meter. Not the dollars and cents, but the number of the meter in order to identify it. The number of the meter is not in my journal entries. That is on the bill in some cases, but not in every case.

Taking the dollars which represent the meters in our fixed capital account of 1908, which we now have on hand, and deducting from that the dollars which represent the additions made from 1895 to 1908, the sum which I arrive at would be the sum representing the meters in our fixed [fol. 1456] capital of 1908, which we now have on hand. It does not make any difference what I might call it. It is the difference that I arrive at. I do not know whether it is the minimum or maximum. It is the difference. It might represent anything at all up to December 31st, 1908. You can call it whatever you like, but you cannot identify any single dollar of it. It is true if you take the fixed capital account as of December 31st, 1908, representing meters, of $1,905,672.34, and deduct therefrom the additions, the money representing additions to the meter account made since 1895, and up to 1908, the sum which you will arrive at will be the dollars representing at least the minimum dollars—representing the meters installed prior to 1895, which are in use by the company today or on hand, assuming that they have made no withdrawals.

Counsel is trying to get me to say something that is not. That is not criticising him at all, but here is a bookkeeping proposition. Here is a company that is not dead, we are moving all the time, and we are making meter transactions. If you take a balance December 31st, 1923 and I deduct what I bought, it will give me at least a certain figure—that is not a fact, because there have been withdrawals made from that account, whatever you deduct for your purchases you must

add for your withdrawals, so you do not get "at least," but you get a figure. If you knew the money value of the meters taken over in 1895 and knew the money value of the withdrawals between 1895 and 1908, and if you knew the money value of the meters acquired between 1895 and 1908—figure out your net additions and if those additions exceeded the amount of the withdrawals, I think you could [fol. 1457] determine that the value of the meters now in use, which were installed prior to 1895, did not exceed a certain sum, but were approximately a certain sum. I have a book showing the withdrawals of our meters. It is not in court. That shows the meters that were withdrawn from service, and if the books was here I could not tell either, unless I added them all up. In the month of June we withdrew 278, 3-light meters, and 1,351, 5-light meters and our total number of meters withdrawan in that month was 1,705. The total number of meters withdrawn in July, 1923, was 1,435 and the total number of meters withdrawn in August, 1923, was 1,786. The total number of meters withdrawn in those three months was 4,926, consisting of 772, 3-light meters, 3,971, 5-light meters, 139 10-light meters, 15 20's, 9 30's, 5 45's, 3 60's, 4 100's, 1-150-light and 7-3 light prepayment meters. I checked the book. It is correct with the exception of the sizes. You have entered there the years in service of the meter, checking it up with the idea of verifying from my records the years in service of the various meters withdrawn. That is part of the office routine. It is checked every month. The sheet shows that during the three months referred to we withdrew certain meters having an age from one to five years, 167 meters with an age from six to ten years and 147 meters from 10 to 15 years, and 1,269 meters from 15 to 20 years, 1,280 meters from 20 to 25 years, 1,683 meters from 25 to 30 years, 541 meters from 30 to 35 years, 171 meters from 36 to 40 years, 127 meters from 40 to 45 years, 18 meters from 45 to 50 years, 24 meters from 50 to 55 years, 5 meters from [fol. 1458] 55 to 60 years, and one meter from 60 to 65 years. That is, there is a little difference in the total number there, but the grand total is the same. The bulk of our meters is withdrawn in those three months at about 30 years. The average number of years which the meter had been used before withdrawing from service in those

three months was about 30 years. I cannot tell how many meters we have in use now that are over 30 years of age, nor can anybody else. I do not see how it possibly could be ascertained. I have a fixed capital account called Tools and Implements. On December 31st, 1908, that account was opened up at $76,868.85, what is represented by large heavy tools that have a very long length of service, such as, eight foot chain wrench, great big heavy Stillsons and chain wrenches and large portable tools for easily handling heavy stuff around the works, such as chain blocks and the like, heavy coal buckets. All the small stuff goes into material and supplies and it is charged out on the job as used. None of the small wrenches are ever charged to the capital account. They go into stock and are charged out on the job as used. An ordinary pipe, 12-inch, wrench, Stillson wrench, that is charged to materials and supplies when we buy it. I do not know whether it is taken out of the stock room. It is charged to the job it is being used on. After that job is finished, the tool is returned to the stock—that is, if there is no further use for it. If it were an 8-foot Stillson wrench it stays in the tool account; it is not charged in and out then, of the materials and supplies. [fol. 1459] That is small stuff. Every time a man wants to use a monkey wrench he charges it out to the job and in a great number of cases that is the end of it, because they are pretty well used by the time these fellows get through with them. That is prescribed by the Uniform System of Accounts, by the way. I have not made many withdrawals from the Tools and Implements Account. The Tools and Implement account in 1895 when we took over the old companies was $52,700 and in 1908 it was $76,868.85. There were credits to the account Tools & Implements from 1895 to 1908. They happened in every year. We wore out and discarded some of these tools every year.

In 1896, for example, there was a credit to Tools Account of $7,263.99. That represents tools withdrawn; taken out of the account. I find them for subsequent years, each year. In 1897 there was $5,779.87 and in 1898 there was $5,576.49. That is, we withdrew tools at about $5,000 a year, until we came down to 1908.

I would have to look through the ledgers to find out whether we made for the next eight years from 1908 to 1916,

any withdrawals. We are making withdrawals of tools quite frequently. I could tell by analyzing the accounts how much we have withdrawn in the last twenty-five years. It would take quite some time here on the books. Going back to the Tools & Implements, you cannot tell from the ledgers, where the pneumatic tools that Mr. White spoke about were withdrawn from the Tool account. It is impossible to pick it out from the journal.

The account Meter Cocks and Connections; that account [fol. 1460] was opened in 1895 at $163,012.50. December 31st, 1908 it was $388,820. It stands at that same figure today. There has been no withdrawals from Meter Cocks & Connections since 1908, that is, caps and swivels, which in the old days used to accompany the meters. Just the caps and the swivels. I do not think it means the piece of pipe leading from the service pipe up to the meters. Just the caps and linings that came with the meter in those days.

A connection is the title of the account Meter Cocks & Connections, but that is what it means, meter linings. We have in our books an account showing where we added that to our fixed capital account. It is added to each year. For example, in 1896 we made the net additions to Meter Cocks & Connections of $66,544.11, that is $66,544.11 worth of caps and swivels. I could not say how much these caps and swivels cost or how many caps and swivels are represented by that. I do not know how expensive these caps and swivels are. They are made of brass. We still have them only I believe now they are iron instead of brass. We put them under the Uniform System of Accounts as, Material and Supplies. They go into an operating account. We still have the same class of material, but, under the uniform system we do not put it into capital. That has not any relation, to the installation of the meters, it just is the cap and the swivel that is on the meter. It is part of the meter, to make the connection with the pipe, to supply the consumer; the pipe that runs from the service pipe to the meter itself, that is the connection with the service pipe and our meter and is charged to services.

[fol. 1461] The pipe that runs from the main inside the house line is a service. When it gets right inside, they cap it. When they come to install the meter they have to put a piece of pipe running from that service pipe up to the meter,

then they might also have to run a piece of pipe from the meter to the house service, to the riser; those two pieces of pipe represent part of the gas meter installation work in this original account those connections always appeared in the ledgers ever since we started. That is up to 1908, and are still on the books.

The Account of Meters, Cokes and Connections did not include those two pieces of pipe. I am almost positive about that. I assume that we have a great many of these old brass caps and swivels. There is not much wear to them. We probably have all of them since 1908. We have not withdrawn any. When we take a meter out of a house nowadays, we take off this cap and swivel. I believe they are iron. I do not believe they are brass any more, although I do not know that. I suppose all of these brass caps and swivels are still in existence. I have no means of knowing that for a fact. We have not made any withdrawals to Meter Cocks and Connections that I know of. They are part of the meter that are not identifiable after they once go on to a meter. You can not say this cap and swivel we bought in 1906 or 1908, or anything about it. We do not know. When we scrap our meters we do not scrap the caps and swivels. We save those. So from all these meters we scrapped in June, July and August, 1923, the caps and swivels were taken off. The cap and lining, one goes in the [fol. 1462] inlet pipe and the other goes on the outlet pipe. I have a picture of a swivel right in my mind, it is a connection that fits on to the inlet pipe and the outlet pipe, and has a free motion so that when it is fastened to the connection in the house, why, they simply screw it on to the pipe there and it is tight. I guess they are all in existence, or were in December, 1908—the same ones are in existence today.

If a house is torn down we save the meter and save this cap and swivel; also these two pieces of pipe that connect the meter. I never knew of a withdrawal in our meter account or of Meter Cocks and Connections being made because a house had been torn down, not unless the meter was absolutely burned up and gone. If a meter was burned up it might burn up the cock and swivel. I could not tell you whether any of them was burned up since 1908. I have not followed the fires, for one thing, and I have not followed the meters for another, and the books do not follow fires, either.

My items of property that were withdrawn from service in 1923 appear in journal 19. Journal 19 is in the office. It is in use today. I cannot give the actual cost of cutting our pavements and restoring it over mains and services, shown by our books; that would be the paving bills, I assume.

We have bills from the City for the actual cost which the company has incurred for paving over mains and services. It would have to be taken from the bills themselves; there are quite a few of them. We credit the main account with the actual cost of installation. The books would not tell any more than that.

[fol. 1463] The books showing the mains retired in 1922 or 1923 shows in the credit to the main account. I have not the detail of it. I have Journal No. 11; the cost of installing mains, as shown by our books in June and July, 1923 and the cost of installing the services during June and July, 1923. I would have to find out from Mr. Noah. I would have to analyze every credit of those accounts, to find out whether a consumer paid it or not. We report to the Public Service Commission a figure which represents credits to the mains and services, from which we receive money, but it does not represent the amount of money that consumers contribute. We get the money from various charges that we make for doing work on the district. In connection with mains and services. We get it from charges we make to various parties for doing work on mains and services. That does not represent in large measure the contributions by the consumers. The contributions by the consumers represent a very small part of it. It represents charges to concerns such as the New York Telephone Company, Edison Company, railroad companies—in other words, any company that has a sub surface structure, for altering mains, changing the location, a breaker box or some such sub surface structure, there is no way that we can tell, very readily, how much the consumers have contributed to the cost of installing a surface. To get the actual cost for restoring the paving over mains and services is really going into the contracts there, we have hundreds of these bills, hundreds of charges.

The amount of credit to fixed capital account which is re-[fol. 1464] lated to materials and supplies represents the

value of good material to be put back in stock. Mains are withdrawn at the actual cost when known, and estimated when not. Services are withdrawn at an estimated figure always. The expenditures made for repairs, and the various authorizations for repairs to our plant since June 1st, 1923, are represented by hundreds of work orders.

[fol. 1465] The Brooklyn Union Gas Company

Brooklyn, New York, April 14, 1924.

JACOB H. HOLLANDER

Direct:

My name is Jacob H. Hollander and my residence is, Baltimore, Maryland. I am Professor of Political Economy in the Johns Hopkins University, head of the Department of Political Economy. I have held that Chair, twenty years as professor; ten years before in junior grades.

While I have held that Chair, I have been called on from time to time, to perform other duties for the United States Government. I was Secretary of the United States Bi-Metallic Commission that went to Europe in 1897. President McKinley sent me to Porto Rico after the Spanish American War to organize the finances of the Island; I was the first treasurer. Later I went to the Indian Territory to study the tax system preliminary to the admission of the Territory into statehood. I was sent by President Roosevelt to adjust the debt of the Dominican Republic.

I was umpire under the Fuel Administration, Potomac and Upper Georgia coal fields, and more recently economic advisor of the United States Coal Commission. I made a study and prepared myself for giving such testimony a year ago for the case of the Consolidated Gas, Electric Light & Power Company of Baltimore, for the Public Service Commission; more recently in the case of the International Railway Company, one the New York Public Service Commission and the New York Interurban Water Company, before the Supreme Court of your State.

I shall state what the term general prices in political economy means. Prices of commodities are subject to vari- [fol. 1466] ations due to factors affecting those particular

commodities. They are also subject to factors which affect all commodities. In order to eliminate the specific factors a large number of commodities is selected with respect to covering the entire field. Such large number will tend to get rid of the variations of the particular commodities and will disclose the forces which affect all commodities. General prices then consist of the selection of a large number of commodities by some authority whose competence is unquestioned, ordinarily a Government agency, and the weighing off those various commodities in accordance with the importance that they play in the total production of the country, in order that one small commodity may not distort the effect. This averaged, weighted price is then presented as a relative to a base line.

The Bureau of Labor of the Department of Labor is the authoritative quarter by which such figures are regularly collected, tabulated and presented in the official publication of the Government. There is more and more disposition to use the results obtained and published by the Bureau of Labor of the Department of Labor, to the exclusion of any other collection made by private agencies, such as Bradstreet's and Dun's, and this in consequence of the increasing refinement and precision of the tabulations of the Bureau of Labor.

Referring to the term "Index number of prices," a presentation of general prices as an absolute number would be of little use or, at any rate, would be very difficult to [fol. 1467] handle. If we should take, as the Department of Labor does, four hundred commodities and add together the wholesale prices in one month and then add together the prices of the same commodities, in the succeeding months we should have very large and unwieldly aggregates that would be difficult to compare. Moreover, the difficulty would be present to which I alluded, that one article, pepper, for example, that has been subject to violent price changes, would seriously distort the exhibit. Accordingly, the device of an index number is employed, whereby a year that is regarded, after a careful examination, as a typical year, that year is taken as the base line, and the prices in that year treated as 100, and the prices for every successive month or successive year treated as a multiple of that 100 in the proportion which prices of the later periods bear

to the earlier period. Moreover, the index number also incorporates the element of weighting, by which pepper, for example, would be given the relative importance that the production of pepper bears to the total production, whereas copper or lumber, being given a like proportion, would, of course, contribute very much; so that an index number might be described as weighted average converted into a relative to a base line period. The alternative method is to add the price per unit of each article, getting an average price per unit; that is, per pound or per bushel or per ton or per hundredweight, or whatever it may be. That method is used by Bradstreets, for example. They would take a unit of lumber measure and preserve that unit per thousand feet, for example, for a certain grade of lumber. Then in the addition I would be adding the prices of differ- [fol. 1468] ent kinds of units, and the result would give me so many thousands or hundreds of thousands of dollars which, in order to permit any comparison, would mean a reduction again to a relative, and it would also permit a violent fluctuation in one commodity during the month to distort the entire result.

Where commodities are sold by weight, the unit of weight would not necessarily be taken in all cases, as for example, pepper by the pound or flour by the pound. It might ordinarily be the unit of purchase, flour perhaps by the barrel or sugar by the hundredweight or cotton by the bale. I would have a subordinate expert opinion as to what constitutes the unit of values and there might be a difference of opinion— as to that factor and that element would throw out the whole calculation. For that reason the disposition among statisticians and economists is to resort more and more to the Bureau of Labor, but the significant fact, I must add, is that in the large movements not very different results are shown for these several methods. Now, in the more approved method that I have described, there is disputative ground as to the weighting that a specific article of merchandise is entitled to receive. Opinion could vary on that subject, and yet the method adopted has commended itself generally to those who have studied it, that a change in price should be given the importance in computing the general price change that the production of that commodity bears to the total production. That element of relativ-

ity is entirely worked out by the governmental agencies. No economist, with one exception, attempts any independent computation. Of weighting or of price computation.
[fol. 1469] All the figures that I employ are transferred bodily from the Bureau of Labor figures. The only exception to that is a very useful computation that Prof. Irving Fisher of Yale University has undertaken this year, designed to show weekly modifications. That is the only exception. The Bureau of Labor figure is a monthly figure, and Prof. Fisher conceived that some usefulness would be served by a weekly table; but with that exception—and of course that does not preclude the use of the other.

I hesitate to criticise Bradstreet's as distorting the index number or the prices of commodities, because it serves a very useful purpose, but I think there would be general agreement that the Bureau of Labor index number is the more precise and the less open to criticism of any kind, having been subject to extremely careful criticism both as to method and as to the collection of data. It is essentially a governmental function, the collection of prices and the preparation of a price index. That is precisely the kind of work which the Bureau of Standards does in the matter of the preservation of standards of weight and extension, and it has indeed been urged repeatedly in Washington that the computation of the index number, namely, the unit of value measurement, should be transferred to the Bureau of Standards. The object of collecting a representation of general prices is to present in numerical form the changes in purchasing power. When one speaks of 400 commodities undergoing a change in price, one really means that a dollar will command so many of these 400 commodities at one time, and so many more or so many less at another time. In other
[fol. 1470] words, 400 commodities is typical of general purchasing power, so that the two terms are really the several sides of the same shield. On the one side one may describe them as general prices. Looking at it from the standpoint of purchase, one may conceive of it as the purchasing power of a dollar. I have particularly studied the changes in the index number of prices between 1913 and 1923; as an economist, of course, I am interested always in that indirectly to some extent, but with the entry of our country into the war, indeed before, at the outbreak of the war, my

interest centered on the relation of our war financing, and of the changes in international trade upon price levels, and that interest culminated on the publication of a little book in 1918 dealing with the changes that were coming about in price levels, in consequence of the war inflation and other factors.

I have prepared a graph showing the movement of wholesale prices in the United States during the period alluded to. That chart is on the board here. (Witness produces some photostatic copies of those charts.) This is a reproduction of the large chart. They are not all the same, four are bound together. A set is bound together in each folder.

Referring to the chart Numbered one "Prices in the United States 1913 to 1923," the graph just alluded to. The first of the three curves, the one marked "Wholesale commodities," is the Bureau of Labor index number converted into a graph or curve. That is what is technically known as a logarithmic chart, but it can be easily studied as an ordinary chart by reference to the numbers on the side. [fol. 1471] The year 1913 is here taken as the base line and the prices which obtained for the 400 commodities during that year; that is, by averaging the twelve months, were treated then as 100 per cent. That figure I have just spoken of, this average price for those twelve months in 1913, is data received from the governmental agencies. This entire graph or curve is transferred bodily from the monthly labor review of the Department of Labor. My computation consists of that entirely.

Referring to the line marked "Wholesale commodities"—that is taken bodily and completely and every part of it from the statistics of the Department of Labor, Bureau of Labor of the United States, with the exception of the last two or three months. It is the practice of the Department of Labor to publish this curve at intervals of perhaps four months.

(Marked Plaintiff's Exhibit No. 273 for identification.)

In all the references in my testimony to this graph numbered 1 on the board, I have referred to the Plaintiff's Exhibit No. 273 for identification, Sheet 1. The only addition is the incorporation of November and December, 1923 by an extension of the curve. As to line for the year 1923, it is

the extension of the official curve by annexing to it the official curve number for that month, the last issue of the graph terminates, perhaps, in October 1923; then the November and December index numbers are presented, and I have added them to the graph, to complete the months October, November and December, 1923.

[fol. 1472] This graph is prepared by me or prepared by the Governmental agency. The continuation is just as official as the graph itself, being merely a graphic representation of the additional figure. This is a copy of the Governmental graph then; the index number at the beginning of 1913 is 100 and the index number at the close of 1923 as shown by this graph is 150. You can get the index number at the close of any year by finding where the vertical heavy lines intersect the curves wholesale commodities, and then carrying that point of intersection out to the figures on the right of the graph or the left. Translating that into purchasing power of a dollar, the relation between the purchasing power of the dollar at the beginning of 1913 and ending June 15th, 1923, which is the date as of which the Department of Labor monthly index number is announces, was 153. If you will notice in 1923, the fixed line, if you will run up the fixed line until it intersects the particular thing, you will find that that represents 153. You see there is a slight extension, and at that point, (indicating) it is 153. The purchasing power of the dollar, would be determined, for easy computation, take an index number 150, which is shown at the close of the year, simply by dividing the 150 or 153 into 100, would give you the equivalent purchasing power, 66 2/3 cents. Confining yourself to those products shown there.

In order to arrive at 153, for example, take in the block marked 1923, each of the perpendicular lines is a month. There are twelve of them. Now, six of them should rep-

[fol. 1473] resent June 15th, and if that is continued, following that up until it intersects the wholesale commodity prices curve, that particular point should represent 153—between 150 and 175; you will notice it is slightly above 150. It is an estimate of the distance in this diagram between 150 and 175. Whether it be one-third or a half or some other fraction, that is the characteristic of this logarithmic price. Whereby, you see the intervals grow less, but

you are prevented from error by the numerals on the side. The shorter interval betwen 150 to 175 is designed to represent 25 points. I am dependent on that for the figures, the statistics, the publication of the Bureau of Labor of the Department of Labor show that figure of 153 for that month, absolutely, so that for every month that I have shown the statistics of the Bureau of Labor, Department of Labor, show the index number and this line is drawn so that if between 150 and 175 there were 25 compartments, it strikes the point that would be marked 153. Since that chart was prepared, the January and the February numbers have been issued by the Department of Labor. It so happened that the January 1st was 151 and the February 1st was 152. If I were revising the chart, I would simply extend that curve with mathematical correspondence so as to show those two additional data, but, in both cases there are issued in mimeograph form, as the official figures, by the Department of Labor.

The 400 commodities are grouped by the Department of Labor into nine principal groups. Those are farm products, food, clothes, and clothing, fuel and lighting, metals and metal products, buildings and materials, chemicals and [fol. 1474] drugs, housefurnishings and miscellaneous. The design is to avoid any possible variation due — particular causes affecting the whole, on the well-established statistical principle of the law of large numbers. If you take a sufficiently large number of particular cases, the ups and downs will counteract one another, and you will have disclosed the factors which affect all. If in one of those groups the prices are presented with the view that such a general factor as a depression of the currency, which would pervade the entire list, will appear despite the specific influences—increased production or technical variation, that effect particular commodities. Now, for any one of those groups the exhibit can be shown for any particular month. They vary. Say for farm products in December, 1923, they were 145, while clothes and clothing were 203, the metals and metal products were 142, while buildings and materials were 178, but taking all of them and giving them the importance which they possess in the business life of the nation—that is what is called weighting. It is designed to eliminate the variation which grows out of the conditions of

purchasing this or that, and which are, from their nature, momentary. If there is a temporary condition of over-production, the price of that commodity will be low; if there is a temporary scarcity, it will be up; but sweeping through it all and pervading it all is this general cause which appears to be an augmentation, such as these represented by that peak movement, and then brings about a rapid descent. The picture is best visualized by speaking of the level of the sea. The level of the sea is not an actual level, there are billows and crests, but nevertheless we have a very definite picture of the sea level as compared with what might conceivably happen in the case of an earthquake, when the en-[fol. 1475] tire level of the sea would have been raised, although there will still be the ups and downs.

(Plaintiff's Exhibit No. 273 for identification offered in evidence.)

Pamphlet marked on the cover "U. S. Department of Labor, James J. Davis, Secretary, Bureau of Labor, Statistics, Monthly Labor Review, December 1923," page 58 is the graph to which I have referred. This is a copy from that up to October and supplemented then by official bulletins as to the monthly index numbers.

Plaintiff's Exhibit No. 274 for identification is the Monthly Labor Review issued by the United States Department of Labor from the Government Printing Office, for the month of December, 1923. That particular copy is from the file of the Johns Hopkins University, as is evidenced by the rubber stamp on the outside. I trust I may be permitted to replace it with another copy equally as good. It is a monthly publication. I have not compared this with the original chart that is gotten up by the Government. I don't know how large the scale is of the original map. I have with me the data from which I extended the line on this exhibit marked wholesale commodities. Pages 57 and 58 of Plaintiff's Exhibit No. 274 for identification represents the official figures.

I have here one that carries it down to a later date which you might prefer to substitute. Substitution of this for Plaintiff's Exhibit No. 274 for identification, in marking this copy belonging to the Johns Hopkins University, reading "United States Department of Labor, James J. Davis,

Secretary, Bureau of Labor, Statistics, Ethelbert Stewart, [fol. 1476] Commissioner, Monthly Labor Review, Volume XVIII No. 1, January, 1924," pages 41 and 42, page 41 containing the index number showing changes and so forth, and page 42 is the graph objected to and overruled. Exception.

(Pages 41 and 42 marked Plaintiff's Exhibit No. 274 in evidence.)

Now, we need use only December, because November is in the Exhibit. For December, 1923, the Department of Labor issued in advance of the appearance of its official review, in consequence of the importance of the matter, an advance bulletin. I have that bulletin for December, 1923.

Bulletin offered in evidence, objected to.

(Received in evidence and marked Plaintiff's Exhibit 275.)

The Department of Labor collects the three groups of figures wholesale commodities, retail food and cost of living, and I gave them quite correctly the original one which they have been at pains to revise for the wholesale commodities, and then I gave you improperly a January one, which contains retail food, so we will have to go back where we were. The explanation is that the Department of Labor alternates, one month it publishes the graph of the wholesale commodities, and the next month it publishes the retail food. The figures, but, no graph, are contained in the monthly labor review for December, 1923, which was the first exhibit. That is, Plaintiff's Exhibit No. 274-A if the first one. They are continued through November, 1923, in the Federal Reserve Bulletin, the official monthly publica-[fol. 1477] tion of the Federal Reserve Board, through November, 1923. They are continued through December in Plaintiff's Exhibit No. 275—those three documents.

(Marked Plaintiff's Exhibit No. 274-A for Identification.)

Page 79 of Plaintiff's Exhibit No. 274 for Identification, the column on page 79 marked "United States Bureau of Labor statistics revised, 404 commodities variable," shows figures for the United States.

Plaintiff's Exhibit 247-A for identification received in evidence and marked Plaintiff's Exhibit 247-A.

This pamphlet marked Federal Reserve Bulletin, issued by the Federal Reserve Board at Washington, January, 1924 is very recent statistics, and government publications are not likely to be up to date, so when searching for the most recent date, it will be found in those publications that seek to come up to date. The Federal Reserve Bulletin which is published monthly by the Federal Reserve Board, has incorporated the November figures. Of this same series of the Bureau of Labor, it obtained the figure before the new issue of the Labor Review had appeared.

The index of the Bureau of Labor statistics, the column marked "All commodities," from the Federal Reserve Bulletin, January, 1924, issued by the Federal Reserve Board at Washington, offered in evidence. This is obtained by official requisition of the Federal Reserve Board on the Bureau of Labor and transmitted by the Department of Labor to the Federal Reserve Board. The paper that I am speaking of, the publication is an original publication of a governmental agency of the United States Government, [fol. 1478] namely, the Federal Reserve Board. The Department of Labor index number is compiled by the Department of Labor. The Federal Reserve Board receives this in advance of its dissemination through the published monthly Labor Review of the Department of Labor. This is copied for November, of the Federal Reserve Board. The original for November is issued by the Federal Reserve Board. Even the December issue of the Bureau of Labor would only present the September index number, inasmuch as perhaps three months elapsed in the actual publication of this Review; whereas the Federal Reserve Board is careful to obtain the very last word on the matter. That is why instead of submitting one document, I have to build or put together these most recent figures from the several collections.

The United States Government publishes these figures through two difference governmental agencies, namely, the Federal Reserve Bank and the Labor Bureau, and the publication through one agency, namely, the Federal Reserve Bank, usually precedes the publication through the other governmental agency, to wit, the Labor Bureau. There are

three stages in point of time. The very last word would appear in this mimeograph Bulletin. A little behind that will be the Federal Reserve Bulletin. Behind that in point of time will be the Labor Review, the monthly Labor Review, and all of these are the identical publications by the United States Government, and the identical figures. The only difference is the period of time, that it takes longer for the Government printing office to put out the one than [fol. 1479] for the mimeograph clerks of the *of the* Department to issue the other. The publication by the Bureau of Labor is not generally the accepted publication on that. It is really put out in this form, b*u* the United States Labor Bureau, because they realize the delay that must elapse before the bound volume of it can appear.

(Pamphlets received in evidence and marked Plaintiff's exhibit No. 276.)

Referring again to Plaintiff's Exhibit No. 273 for Identification, the line of the graph marked "Wholesale commodities," the extension for the later months of 1923, shows in graphic form the figures taken from these various exhibits or publications.

Plaintiff's Exhibit No. 273 for Identification, being the graph marked or headed "Prices in the United States 1913 to 1923," offered in evidence. Objected to. Overruled.

(Plaintiff's Exhibit 273 for Identification was received in evidence.)

Plaintiff's Exhibit No. 274-A, just the one column which related to wholesale prices in the United States, all commodities, was offered. It is the same as the other, only carried one month beyond.

The Federal Reserve Board, is the administrative body constituted by the Federal Reserve Act for the supervision of the Federal Reserve System. The Secretary of the Treasury is an ex-officio member of the Board, but it is an independent governmental body appointed by the President of the United States. The Federal Reserve Board publishes bulletins showing production of basic industries, the volume of business from time to time.

[fol. 1480] The Federal Reserve Board from time to time

publishes also statistics showing the movement of bill holdings, gold reserves, Federal Reserve notes, gold reserve ratio and the member banks' loans and investments.

I have prepared a graph showing the movements of the bill holdings, gold reserves, Federal Reserve notes, reserve ratio, member banks—I will say the loans and investments of member banks, from 1919 to 1920. In every instance that graph was prepared from the official data of the Federal Reserve Board. It is diagram No. 3, The Federal Reserve at that time is No. 4 on the diagram, but, it is the very next one that appears there, and it is also No. 4 in the small bound book here.

(Sheet 4 marked Plaintiff's Exhibit No. 278 for Identification.)

The official publication of the Federal Reserve Board is known as the Federal Reserve Bulletin, which is published monthly and the data contained in which are anticipated in the same manner that I have referred to in the Bureau of Labor, by mimeograph weekly numbers. For the older facts I have used the Federal Reserve Bulletin. For the most recent facts I have sometimes used the mimeograph copies. This pamphlet was published by the Federal Reserve Board. I have one of those bulletins here. I will use the one already marked. The bulletin was issued by the Federal Reserve Board at Washington, from the Government Printing Office.

The Federal Reserve Bulletin, January, 1923, pages 55 to 65, designated "Banking and Financial Statistics, Condition of Federal Reserve Banks," which appears each month and presents in brief detail the data from which this graph [fol. 1481] has been constructed, by the conversion of absolute into relatives. The data which appear are in actual dollars. In order to show the trend, the dollars for 1919 are taken as 100, and then the dollars, as it were, for each successive month are computed as percentages of the 100. Otherwise we would be dealing with billions, wheras now we have manageable relatives. This is the usual and necessary mode of graphic presentation of numerical aggregates, and this Plaintiff's Exhibit No. 278 for Identification is a graph showing the statistics in the monthly publications of the Federal Reserve Board, made into a graph by the methods I have described.

(Plaintiff's Exhibit No. 278 offered in evidence.)

Objected to as incompetent, irrelevant and immaterial.

(Plaintiff's Exhibit No. 278 for Identification was thereupon received in evidence.)

This computation is made by me in the conversion of an absolute into a relative purpose. In transforming them I did not make any computation. I took all the figures appearing in this book. The figure for 1919 becomes 100. Suppose the figure for January, 1924, was twice that, in dollars, twice that. Suppose the figure for 1919 were one billion, and suppose the figure for 1924 were two billion; then the figure for 1924 in my chart appears as 200. That is purely arbitrary on my part. I might have taken any other figure and yet disclose the data that was under consideration, otherwise the graph would be the height of this room. You [fol. 1482] could not possibly reduce it to manageable proportions unless you did that.

The Federal Reserve Board publishes reports or data showing the production of basic industries and the volume of business from time to time. I have prepared a graph showing the production of basic industries and the volume of business from 1919 to 1923—Sheet 3.

(Sheet 3 marked Plaintiff's Exhibit No. 279 for Identification.)

The sources I obtained the statistics which appear on this sheet, last exhibit, are the upper curve is the production in basic industries; the solid line is the production of the data collected and officially presented by the Federal Reserve Board month by month; the broken line is the volume of business, is the reproduction of the official data presented by the United States Department of Commerce, published by the United States Department of Commerce in official form in its survey of current business, issued month by month in the Bureau of Foreign and Domestic Commerce of the United States Department of Commerce. And with those publications before me, I constructed these two curves, in the same manner. The construction is only the presentation of these figures as relatives to 1919.

In these two curves the relatives are actually presented by the governmental board, so I have used them. The Federal Reserve Board and the Department of Commerce pre-

sent relatives, so there has been no computation whatever. In the other one there was the use of relatives by my own—The Federal Reserve Board presents the absolute numbers [fol. 1483] alone and not the accompanying relatives. In this exhibit the United States Government computed the relatives, and in the other I computed the relatives. This is not a copy of any curve that is prepared by any governmental agency.

Objected to. Exception overruled.

(Plaintiff's Exhibit 279 for Identification received in evidence.)

I have formed an opinion, based upon the facts to which I have testified today, as to further stability or instability of prices for the next three to five years, and an opinion as to the probable rise or decline of prices for the next three to five years.

May I say at the outset that no economist of standing ventures an opinion on this matter lightly. His opinion is not a surmise, it is not an hypothesis or a speculation, the words that are ordinarily used, but represents the working of what are known as rational processes of mind from a body of very definite events.

I can begin best by facing the first chart, if I may have it. Price variations are, of course, a matter of familiar experience. Varations occur in all commodities from day to day and from year to year, and if a large number of commodities were taken, these circumstances would tend to counteract one another, and at best we should have comparatively slight variations and indicating no marked trend. If however, the course of prices in the last ten years be examined, the results are sensational in the last degree. From 1913 to 1915 prices were comparatively stable. 1915, the end of 1915, they rose from where they had been [fol. 1484] practically without halt until, in the summer of 1920, they had reached a point of nearly 250, taking 1913 as the base. Now, that phenomenon of a rise of 250 per cent. in a period of five years is conclusive evidence that something was at work much more than ordinary oscillating influences; but if it is possible to make conclusive evidence more conclusive, the event of the next twelve months in the price drop from approximately 250 to approximately 135 would

show us again that we have to do with pervasive and influential factors, and similarly the succeeding changes thereafter disclose the working of factors that go above mere specific variations. That is to say, from the middle of 1921 there was an upward movement to the middle of 1922, continuing up to the spring of 1923. Since 1923 there has been comparative stability.

The pronounced stability has been in 1923, including 1922 there has been, as compared with the violence of the preceding changes relative stability. It is as to the causes of these veritable price revolutions that economists have been concerned, and such opinion as they entertain as to the permanence or temporary character of the latest phase of the situation with respect to a period ahead of from three to five years are predicated entirely upon analysis of this subject, fortified by recourse to the older and less sensational price variations. In short, an opinion as to the future is based upon an analysis as to the forces that have brought about sensational and revolutionary price changes. The ground has first been cleared in the study of economists by disposing of an extremely mischievous opinion that has [fol. 1485] gained a certain currency, that is misnamed and mischievously misnamed "historical parallel." It proceeds on the assumption that the sequel to earlier price disurbances associated with war will be repeated in this case without any attention being paid to the all-important factor of the conditions now presented, the conditions which mark this war identical or even similar to those which obtained in these earlier periods. The argument will be illustrated by reference to the second chart. It figures as Chart No. 2.

(Marked Plaintiff's Exhibit No. 280, for identification.)

This chart is transcribed bodily from the Volume 1, No. 24 of the Harvard Economic Service, and is prepared by the most accomplished and expert group of statistician-economists of which the fraternity boasts, the exhibit, but not the misuse made of it.

(Marked Plaintiff's Exhibit No. 280 in evidence.)

The Harvard group of statistician-economists, as every economist with whom I am acquainted, assents to the exhibit

and protests vehemently against the misuse made of it by those who are uniformed as to economic principles.

The facts embodied in this chart are that in the period of from 1814 to 1817, represented by the immediate sequence of the war of 1812 in the United States, and by a period a little earlier in the case of England, represented by the closing years and the sequence of the Napoleonic war, prices rose in a sharp peak-like movement, and after the war for a lengthy period there was a downward movement [fol. 1486] until a point lower than the staring point was reached; and then again in the period represented by 1862 an upward movement of great precipitancy developed in the United States and continued during the duration of the Civil War, followed by a downward movement until again a point was reached lower than the plateau from which the upward movement had started; and thirdly, that in connection with the World War, an upward movement that exceeded the two earlier developed, and that the peak having been reached, a downward movement has developed and has now reached a point practically half way down. Now the inference which has been drawn and against which my opinion is directed, is that because these descents have occurred after the two earlier wars, a like movement will occur after this war. That conclusion would have force, and only would have force, if it can be established that similar conditions obtain in connection with the World War as obtained in connection with the earlier wars in so far as such conditions affect prices. If such conditions were not present, and certainly if the conditions which are present, are diametrically opposed to those price affecting conditions in the two earlier wars, this alleged parallel is not only misleading, but it is absolutely wrong.

Now, what is the two conditions that cause the descent the peak and the trough. They were, that in connection with war requirements in 1812, and again in 1862, the gold standard was abandoned for an inconvertible paper standard by the issue of bank notes in 1812 and by the issue [fol. 1487] of "greenbacks" in the Civil War. The termination of those two wars found the United States exactly at it has found the countries of Continental Europe, upon an inconvertible paper basis, and a definite, clearly entertained and almost heroically executed policy of the United

States was to return to a gold standard, and to return to it in the only practical way—by a contraction of the outstanding paper circulation to an amount necessary to bring back the practicability of convertibility of that paper into gold.

We have, therefore, as the first sequel of these two earlier wars a process of monetary contraction made necessary by the deliberate policy of resuming specie payments. The second characteristic of these two earlier war periods is that the sequel of both was a period of gold famine. For the thirty years from 1817 to 1848, when gold was discovered in California, and three years later in Australia, the world was without a gold production sufficient to make up for the amount used in the arts and loss by abrasion. Historically it figures as the period of gold famine. Precisely the same thing happened after the Civil War, until again gold was found in South Africa in 1897, the production of the Yukon was enlarged and the process of cyanide extractions were applied. It was this period which gave rise to the agitation for an enlargement of the money material, represented by the Bryan silver campaign. And again it figures in monetary history as the later gold famine.

In short, the distinguishing characteristics of those post war periods were the necessity of paper contraction to [fol. 1488] return to the gold standard, and secondly a succeeding generation of literally gold famine. In contrast to that, the termination of this war has left the United States upon a gold standard, paper in use being freely convertible on demand into gold. We have been and we are the sole gold market in the world, and whatever conceivable influences might operate to induce monetary contraction, which mean lower prices, it will not be the necessity of returning to a gold standard, for we have never left it. And in the second place, in lieu of a gold famine, we are embar rassed to very high degree by the existence of a gold plethora. An over-abundance of gold. I used plethora in contrast to famine. So that here again whatever factors may hypothetically induce a drop in prices, it will not be, within the period we are considering, the insufficiency of the gold basis to the credit structure. It is for this reason

that I insist that to exploit under the guise of historic parallels the experience of these two prior wars, is merely to mislead, is merely to say that because things look alike therefore they are going to result alike.

The price drop after the war of 1812 and after the Civil War, was due to the necessity of resuming specie payments and to the reduction in the basic money material. None of those factors are present, and in lieu of them the diametrically opposite factors are dominant element in the monetary situation.

The ground being cleared in this way of this misleading basis for an opinion, the question recurs as to what forces [fol. 1489] have really operated and to what extent do they afford the grounds for an opinion of the course of prices in the near future? Is it possible at arrive at opinions which will commend themselves to thinking minds as something more than a surmise or a guess? It is the accepted belief, not of any highly technical craft, but of all men acquainted with affairs that the two determinants of prices are the amount of commodities and the amount of money. One need not be a rigid adherent of the so-called quantity theory of money to accept that. It is a mere dictate of common sense that prices represent the play of those two forces. There are certain volumes of goods and services which are exchanged in the transactions of the business world for money. If the amount of money is constant and the volume of goods and services should increase, prices would fall. Or, if the volume of goods and services remain constant and the volume of money should increase prices would rise. If both magnitudes remain constant, prices would remain stable; if they increased uniformly, prices would remain stable. There is nothing cryptic about that; there is no necessity for masking it in any technical law. It is merely a generalization dating back for three centuries or two and one-half centuries to the time of John Locke, and accepted in all periods by those giving attention to the matter of prices.

Then the question narrows itself to what has been the course of commodities or what I may call business, including both production of goods and production of services, and what has been the course of the volume of credit during

[fol. 1490] these two years. And here again the explanation is a matter of familiar experience, that as a consequence of wartime conditions, particularly of war financing, in every country in the world, in this country as well as in European countries there was injected into circulation a vast volume of currency and credit, so that although production was enlarged, the enlargement of credit was so much vaster that prices respond. That is the process that is described as inflation. It took place in this country not through the enlargement of the actual money which we carry in our pockets, but through the enlargement of that which we keep in bank deposits. In other countries, England, France, Italy, it took place in both, and conspicuously in the case of the enlargement of paper money. But everywhere one witnesses the augmentation of prices almost pari passu with the increase in the volume of credit. And even the processes of decline confirm the working of that. At the beginning of the War, for the first two years, there was no change practically. Then gold began to come into the country as the Allies were driven to the purchase of munitions and foodstuffs, and prices arose. We entered the War, and very soon the Government adopted the policy of price fixing, and prices were held down. The armistice coming, there was a momentary drop, and thereafter, contrary to expectation, a vast boom developed, our credit system was still dominated by war requirements, there was a tremendous expansion which we called the boom of 1920, and prices rose steadily until the possibility of maintaining the gold standard in this country was actually endangered, [fol. 1491] when the bubble was pricked in the summer of 1920, marked by the increase of the discount rate of the Federal Reserve Bank. The process of contraction, as it were, started and followed the depression of 1921, business slowly recovering, credit fed out again, we witness a recovery that a year ago seemed about to develop an incipient boom where again notice was served by the controlling directorate of our credit system, evident in an increase in the discount rate, and prices dropped to the point where they have approximately remained for a year of relative stability.

This, then, is the warrant for applying for the ensuing

period, the period that lies ahead within a reasonable span, the reasoning and not the theorizing that for an opinion as to price trend we must examine these two magnitudes, the course of business, namely, the production, and of trade, and the course of credit, or the volume of money. And now we have the first of those, the course of production and trade is pictorially represented in my third graph. Up to the time of the War it is astonishing how little was known as to the production of the country. When one spoke of the amount of production being big or little or growing or shrinking, one had in mind certain familiar criteria—the unfilled orders of the Steel Corporation and the volume of car loadings reported by the Interstate Commerce Commission or by the Associated Railroads, but when we entered the War and it became necessary to form opinion of the extent of our resources, in other words, [fol. 1492] when the industries of the country were mobilized, then the War Industries Board was staggered by the fact that no one knew, and there began the preparation of this index of basic industry. That has since been carried on with great exactness and promptness by the Federal Reserve Board and gives us an exhibit of the movement month by month of the volume of production as evidenced by 22 typical basic industries.

The astonishing fact in that picture, which is represented by the low solid line, is that at the present time we are producing an amount greater than in 1919, and exceeded only in a few months of 1920, the boom, and a few months of the incipient boom of 1923.

That chart terminates in December, 1923, and shows a dip there which is, industrially speaking, Christmas loafing. It really is to be corrected by the January, 1924, figure which has since been announced as 120. In short, our current production, barring perhaps a temporary, momentary drop in the last few weeks, if there is such a thing, shows that we are now at virtually a peak production in our national history, exceeded only by a few months in sensational boom periods. The significance of that is that no man will venture to say that we are at the maximum peak of our production, but we are justified in saying that we are measurably in sight of it. Like a man climbing a

mountain, he knows when he is nearing the top; he can not see just how many feet lie beyond, but he knows that he is within sight almost of the top.

The Federal Reserve Bank of New York has worked out, [fol. 1493] under Mr. Snyder and Governor Strong, a very striking exhibit, which shows that the normal increase of production is about three and one half per cent. each year, and that the dips above and below that vary not more than from five to ten per cent. Now, with that fact it is not necessary to entertain any precise computation of a percentage, of a fractional percentage. What we economists are warranted, it seems to me, in saying, is that there is not within the period of which I am forecasting any possibility of there being such a sensational increase in production that that factor would drag prices down, that we are so close to the peak that although there may be some enlargement of production, it will not be of a magnitude to mop up the supply of credit, even though that supply were constant, which it is not. It would not be of a magnitude to mop it up an extent to bring prices down.

Precisely the same exhibit is shown in the other element of business, represented here by the broken line, the volume of business. Now, the volume of trading, mercantile and other, is very well measured by the checks that are presented to banks. In other words, the volume of dailies, and that is the criterion used, that in order that it may be a fair picture of the real commercial life, New York City is excluded, because the Stock Exchange transaction exaggerate or distort it; but this is the computation used by the Department of Commerce as a picture of the movement of business, mercantile trade.

There you have an apparent dip in 1923, but the explana- [fol. 1494] tion of that is that whereas the production curve represents bushels and tons, the business curve represents dollars, and although there is a larger volume of business in commodities without incorporating a lower price level, if we are now comparing say 150 with 250, the peak, you get an apparent reduction of the amount of business. The amount of business in dollars, in other words, is less than it was say in 1920, because the price level instead of being 250, is 150; but allowing for that, we have a volume of business which here again far outruns the war volume, and

probably is exceeded only by the boom speculative activities of 1920.

The two facts thus work in entire support. The amount of business, both production and trade, is such that although there may be some—under favorable conditions some increase, if would not by any possibility attain a magnitude which would mop up the supply of credit, so as to compel the deflation of prices.

Your magnitude is the amount of money. Now, by amount of money I mean not the amount of actual currency, but the amount of credit. As a matter of fact, the amount of currency has undergone a great enlargement, but the real factor will be the banking situation. The banking situation has undergone of course a complete change with the operation of the Federal Reserve System. Under the Federal Reserve System we have a condition in which the money of the country is a pyramid rising on a gold apex. The gold apex is the reserve of the Federal Reserve Banks. Beyond that lie the advances made by the Federal Reserve [fol. 1495] Banks to the member banks. Beyond that lie the deposit loans extended by the member banks to their customers. The situation of our credit system is practically this, that the member banks have discharged their obligations to the Federal Reserve Banks by all except that which might be called a nominal commitment, that which is necessary to maintain the organization, and the Federal Reserve Banks have accumulated an amount of gold which permits not only an additional expansion represented by that which the member banks have paid off, but a tremendously greater one represented by the increased gold holdings. On the chart of the first of the curves—which apparently complex, yet, I think reducible to the fewest and simplest principles, the first curve marked, "Bill holdings," indicates the extent to which the banks of the country borrow from the Federal Reserve Banks. Now, the obvious sensational disclosure there is the drop in bill holdings, which means simply that the member banks are no longer borrowing except as seasonal requirements makes necessary from the Federal Reserve Banks. They have paid off their advances and to the extent that they have paid them off, there is slack available for renewed expansion. That drop from 1920 to 1922 represents, if there were no other

change, the degree to which the business community can be supplied with additional credit through the instrumentality of the member banks having recourse to the Federal Reserve Banks, which was the purpose for which the Federal Reserve Banks were constituted.

The member banks, the banks which we use, turn to the [fol. 1496] Federal Reserve Bank not only to obtain credit, but also to obtain currency, and that is the issue of Federal Reserve notes. Here precisely the same condition exists. There has been a sensational drop in the outstanding volume of Federal Reserve notes, again representing slack which has been taken in and which is available at any time for renewed issue. Omitting the third curve for a moment and passing to the fourth curve, the gold reserves, that represents an absolute volume of gold; it is the apex, and there we see that at the very time the commitments, as it were, of the Federal Reserve Bank have declined, their resources, their ultimate resources as represented by their gold, has increased in equally sensational manner. Combining those two facts into a ration, we reach the last curve which shows that the relation of gold reserves to note and deposit liabilities has increased from 40 approximately in 1920 to 80 approximately now.

That is the ratio, and bearing in mind that the legal ratio is 45, we have a condition that is without parallel in the history of central banking, a condition which is the warrant for the term I used before, of an embarrassment of gold, which, as applied here, means a capacity for further credit expansion which requires utmost control to prevent showing itself. The last curve to which I referred indicates the loans and investments. That is the third curve counting from the top. That means the activities of the member banks themselves, the amount which they have advanced, and the two are combined; but even in the combination, [fol. 1497] it shows that they have operated under comparative stability, that they have not availed themselves of anything like the potentiality which lies ahead of them. If the two were disassociated, we would find that the loans have been even more constant or been, at any rate, advancing less rapidly than the investments. The banks, in other words, have had idle money which they have converted into investments, practically three billions in the last year, two

billions of which have *d*one into investments and one billion into loans, side by side with the fact that no recourse to the Federal Reserve Banks has been had in the actual discharging of prior obligations. All the while the Federal Reserve Bank, through the forces of the situation, has been causing the accumulated gold stock to mount more and more and more. The picture therefore which economists face, is that all the scenes are set and all the forces are working in the direction of a natural enlargement of the volume of money; and the other element, therefore, which would operate to bring down prices, a contraction of the amount of currency, is definitely eliminated from their consideration. In conclusion may I say that this is not a matter of phantasy or guesswork. If economic reasoning permits any conclusion from facts, it is here represented.

The tendency of these natural forces would be for rising prices, which nothing could check except those forces which are operating, banking policy, administrative and legislative policy, and a widespread conviction in the business [fol. 1498] world and in the social world that the mischief of rising prices is as great *as* a calamity as of falling prices, and that the wisdom is in the direction of price stability.

By the Master:

I will define "money" and "currency." The large term "money" may be used to include the two forms: 1, the actual circulating medium represented by coins and paper notes and, 2, ordinary medium of exchange employed in the business world, which is bank deposits.

When I used the word "currency" and the word "money" I was using those words synonymously. The Federal Bank Act was passed in 1913 but did not actually become operative until 1914. The Federal Reserve probably has operated to avert the recourse to government paper, government money.

As long as the overshadowing influence was war financing—not only during the war but during the Victory loan and the floating debt which continued after—the Federal Reserve Board was dominated by Federal requirements, the Secretary of the Treasury and the Comptroller of the Currency shaped its policies. As soon as that passed,

which means practically 1920, the Federal Reserve Board shaped its policies with respect to the business requirements of the country. The discount rate is a rate promulgated by the Federal Reserve Bank and it may or may not reflect the law of supply and demand; it simply reflects and is the edict of the Federal Reserve Banks.

In fixing those discount rates, while the Federal Reserve Bank from time to time has in the exercise of its discretion [fol. 1499] differentiated between various trades is entirely within the control of the Federal Reserve Board, that control must be exercised with some regard to a guiding principle.

I am resorting to an analysis of the reasons which lead the Federal Reserve Board to come to a conclusion. They do come to a conclusion and in the absence of the Federal Reserve Board there would be no such body to arrive at such a conclusion, and no such body to promulgate such a rate. It would then depend on the mere law of supply and demand as the market might operate. But with the Federal Reserve Board in existence, that law of supply and demand has a limited opportunity for operation; it is entirely so modified by the conclusion arrived at by the Federal Reserve Board. It was that which I had in mind in speaking of the large degree to which the natural tendencies consequent upon the inflow of gold have checked from working out their natural influence.

It was charged in 1920 that there were such preferential rates. In the main, however, and certainly since then, the Federal Reserve Board fixed a uniform rate within the limitations imposed by law. But that rate is not the same in all of twelve regional banks; in 1920, for example, the banks of Boston, New York and San Francisco had a lower rate than the other banks. The power has been granted to them, in the exercise of their discretion, to prescribe one rate for instance, for the automobile trade, another rate for the shoe trade, and another rate for the clothing trade. They possess that power, but they may not be exercising it, and whether they exercise it in the future will depend on the prevailing conditions.

[fol. 1500] Referring to varying amount of currency and money in circulation that word "money" is the equivalent or the synonym for "currency" and including both, credit

and currency. When I used the word "money" and the word "currency" I used them synonymously. The amount of money or currency in circulation, taken in connection with the volume of production, gave me the material out of which I came to the conclusion concerning the prevailing prices.

The amount of money in circulation, money or currency, depends on the relations or the transactions between the member banks and the Federal Reserve Bank to a very large extent. In the last two years, owing to the enormous increase of gold and the discharge of debts by the member banks, it is possible for the member banks to expand their loans very largely. Before the days of the Federal Reserve Bank money or currency was obtained, for example, through the national banks and their deposit of United States bonds and the issue of United States currency against it. That is one form of currency that we are all familiar with. The member banks obtain such currency as they desire by complying with the rules and regulations and depositing trade acceptances in the proper proportion to support the currency that is issued to them. It is not the method by which they can obtain additional resources if such resources are supplied through the importation of gold. If an importer, for example, brings in gold he deposits it in his member bank. The member bank adds that to its reserve with the Federal Reserve Bank. That amount of gold [fol. 1501] permits an expansion of credit over which the Federal Reserve Bank has no control, because it has not involved a rediscount. A member bank having so and so many dollars represented in trade acceptances, may deposit those trade acceptances with the Federal Reserve Bank and receive a certain proportion of currency in exchange, and that was what the Federal Reserve System contemplated.

So that what we know as the Federal Reserve currency is issued in the first instance, at all events, against trade acceptances, with other securities back of it, but the immediate transaction between the member bank and the Federal Reserve bank is the deposit of acceptances to support an appropriate issue of Federal Reserve currency. That is one of the ways, but, not the exclusive way.

The element which I must hark back to again and again is that that method which was exclusively contemplated and

which would give the Federal Reserve Bank exclusive control is now supplemented by the inflow of gold, which gives the member banks a power to secure Federal Reserve currency and additional lending power without discounting or rediscounting its trade acceptance. The consequences being that during the last two years the member banks have invested more than three billions of dollars in loans and investments without increasing their rediscounts with the Federal Reserve Bank. They have been able to do that by simply utilizing the additional gold which has come as reserves against this expansion, instead of, as would ordinarily be the case, constituting those reserves by rediscount of paper.

[fol. 1502] My statement carried with it this corollary—that the amount of Federal Reserve currency in circulation does not reflect the amount of commercial transactions between the merchant and the member bank, but must be regarded in connection with the amount of that currency that has been issued against the direct gold deposit.

Precisely, that is, of course, the element of gravity in the situation, namely, the control of the credit situation which the Federal Reserve contemplated through its passing upon acceptances has now been replaced as it were, by an automatic expansion of credit growing out of these gold deposits. That can only come about when the member banks have paid off their obligations with the Federal Reserve Bank and when additional gold comes pouring in. The new figures, at which gold is coming in now contained in the Federal Reserve report which has just appeared is practically three hundred millions last year. It is coming in, I should say, between twenty and forty millions a month.

If we assume as a premise that the amount of currency in circulation in connection with the rate of production gives the material from which to determine the trend of prices and if we assume another premise that the amount of currency in circulation is augmented by the deposit of trade acceptances through the member bank with the Federal Reserve Bank, it isn't a conclusion that the amount of production has given rise to the commercial acceptances, thus sup-[fol. 1503] porting the issue of Federal Reserve currency, because the other factor to which I referred has not taken into account which was never contemplated in the operation

of the Federal Reserve System and which has injected the element that makes further price increase so likely; namely, the inflowing stream of gold, which leads to an additional amount of currency, irrespective in any way of the intervention of the Federal Reserve System.

Perhaps I have not sufficiently emphasized that the discount rate affects only the occasions in which a member bank has recourse to the Federal Reserve Bank for borrowing. The only way in which the discount rate is affected is in reducing or stimulating borrowings by the member banks, understand? It lies within the province of the Federal Reserve Bank, to stimulate or depress the borrowing of the member banks. Then it follows that the law of supply and demand is not operative, but they are simply obeying what might be called the edict of the Federal Reserve Bank. The conclusions that I draw are based not upon economic conditions, but, upon the arbitrary action of the Federal Reserve Bank, but, that is an element in the condition. That is a condition which existed up to and through 1921. But in 1922 and 1923, the member banks when they desired additional credit, did not go to the Federal Reserve Bank However, they would have gone, had the rate of discount been such that they could have gone there more cheaply, then they could no*r* have deposited gold and obtained currency in that form. Why should they? Their gold does not cost them anything. A [fol. 1504] member bank does not rediscount if it has idle funds. If the importers here in New York deposit gold with the National City Bank and the National City Bank, not having adequate vault space turns it over to the Federal Reserve, thereupon the National City Bank has the power to expand eight dollars, we will say, for every dollar in gold it has deposited there. That does not cost it anything. It pays nothing for that, that is a surplus reserve. It does not want to carry a surplus reserve, it wants to earn its board. We know that the amount of currency in circulation, taken in connection with the volume of production, enables us to estimate the trend of prices, without knowing the proportion issued against trade acceptances. We know that in the past three years the amount of currency lent by the banks and used by them in buying se-

curities has been over three millions. In 1922 and 1923 the member banks have expanded their loans and their investments three billion dollars. They have done that without rediscounting any additional amount with the Federal Reserve Bank. How have they been able to do it? Because in those two years they have received from abroad five hundred millions of gold, which became surplus reserves, and on which they could erect this additional volume of credit. So you have an expansion of three billion dollars without any additional rediscount. Now, the significance of it is that to that extent the control of the credit situation has passed out of the Federal Reserve Bank. To use the market term, the discount rate is no longer effective, [fol. 1505] and I think it is a matter of very serious concern to the Federal Reserve Bank how inflation could be prevented, how it could physically be prevented if continued gold came in, since the banks do not borrow from the Federal Reserve Bank, therefore the discount rate would not be applicable.

While in the two preceding post war periods to which I have referred there was no Federal Reserve Bank System, and while there is a Federal Reserve Bank system at the present time, yet the gold reserve has risen to such proportions that the Federal Reserve Bank system is not operating or functioning to affect the amount of currency in circulation. And I might just add to that, that the two elements that point toward renewed inflation, both spell the word "gold," but they are, first, that the actual gold reserves of the bank, which it must give as the basis for any rediscounting activities, have owing to this process of repayment by the national banks, grown up to 80 per cent and, in the second place, that this flood or gold has continued in such proportions that it not only has enabled the member banks to pay off, but now is enabling them, is compelling them by the instinct of self-support, compelling them to further expend their loans without rediscounting, using that gold as surplus reserves.

The Federal Reserve Bank operates at a profit and has always operated at a profit ever since it was organized. I think they have made large profits. I have never seen the computation. The way they work it out is that we must have a billion dollars earning assets.

[fol. 1506] That profit is turned into the United States Treasury, after paying the expense account. It is very doubtful whether the Federal Reserve Bank can pay a net profit if it adheres simply to the law of supply and demand can it make a net profit? The Federal Reserve Bank does make a net profit. What happened was that was not a profit growing out of the normal functioning of the Board, but through the injection of war financing.

The only way it is making a net profit is by investing in Government securities. Open market purchases. Its problem is to have a billion dollars earning assets; as part of those assets represented by rediscount shrink, it goes out into the market and buys certificates of indebtedness, Government bonds and other things.

I can answer that flat-footed. Without the Federal Reserve System at this time nothing that I can see or that seems to me can be seen would have prevented a runaway price movement upwards. Gold would be functioning in its normal way.

You could no more have prevented it than, it seems to me, that what you would have after the discovery of gold in California and after the discovery of gold in South Africa would be that you would simply have a circulation that is built up on a gold apex.

[fol. 1507] My expression of opinion for the ensuing period of three or five years is based largely on the restraining influence of the Federal Reserve Bank. Let me supplement that. The Federal Reserve Board disavows in the most emphatic terms that it is a price-fixing agent. If it is desired, I could read you verbatim from the report that it is not the function of the Federal Reserve Board to fix prices.

"It is our function to accom-odate the credit volume to the needs of the business would." And the explanation of that is perfectly clear. Let the Federal Reserve Board declare that it lies within their power to regulate prices and no power in Heaven or on earth could prevent the reconstitution of that Board with dirt farmers or anything else that would bring dollar wheat up to two-dollar wheat. The essential feature of my testimony lies in the opinion that I have expressed, that the prices for the next three or five

years will be reasonably stable with perhaps a slight tendency toward increase.

I adhere to my position exactly. What I wish to make clear to avert any confusion on that score is that the restraining effect bears the designation in the official utterances of the Federal Reserve Board of a restraining effort in the direction of accom-odating its facilities to the credit requirements of the country and not in the specific way in which I have given it, of maintaining price stability. Because it is a fundamental policy of every central bank to refuse to say that it is a price-fixing agency; because experience shows that, let it commit itself, let it put on record that it can fix prices, and no democracy can permit it to en- [fol. 1508] dare. The term credit stability, the provision of adequate credit facilities, can only be translated into terms of price stability. I have gone through, sir, the latest report of the Federal Reserve, which is still in proof, marking line after line, and I can exhibit them—how it almost takes the form of verbal doctrine. I suppose it is like the Supreme Court when they refuse to lay down a rule of action.

Even in my opinion, the Federal Reserve Board could not maintain that position in the face of the desire of the speculative elements for a rising market in the face of the groups of the community like the agricultural—it could not maintain its position unless it was supported by what is an intangible but neverless a real and a growing conviction on the part of the business world, on the part of the labor world, on the part of society in general, that price stability is a good thing; and they translate it into terms that, "Our policy must be directed to supply the amount of credit which is necessary for the business of the country to conduct itself properly." To make that statement consistent with my testimony, I add one other thing—in the opinion of the Federal Reserve Board.

[fol. 1509] Brooklyn, New York, April 16, 1924.

SIDNEY Z. MITCHELL

Direct:

I reside in the Borough of Manhattan and am President of the Electric Bond & Share Company. I have been running the business since the company was organized, but I have had the title of president for about fifteen years. The business of the Electric Bond & Share Company is to supervise the operations of electric light and power and gas company, to buy and sell securities of public utility companies and to buy and sell public utility properties. In other words, we deal in public utility property. There are a large number of the companies that I have spoken of that have gas business with electric light and power. There are only three that do gas business exclusively. I suppose that we have perhaps forty gas properties all told, but all except three are mixed with electric light and power. The Electric Bond & Share Company annually raises sums of money for the purposes that I have spoken of. As to how much money we raise annually and expend in the promotion and purchase of public utility companies, we have been running somewhere around ninety millions. This year it looks as though it would be one hundred and fifty millions. That is ninety millions annually for the last year, and prior to that it has been increasing gradually from, I should say, seventy to eighty and eighty-five and [fol. 1510] ninety, and this year I think it will be one hundred and fifty. Those are approximate figures. That money is raised for buying properties of gas and electric plants, and improving properties. We get this money from the public, through bankers, and to some extent in late years through the consumers of the company, but it is largely through bankers, distributors. The bulk of the financing is done here, but that does not mean that the actual cash comes from here. It means that it is distributed through distributors, people who keep a retail doorbell ringing organization—such houses as Dillon & Read, Bankers, who have headquarters here and they have their agents all over the United States. They may be stock houses, because you cannot do business on bonds entirely. This is

like getting loans on buildings; you would not loan a man all the building is worth, you have got to have equity. It is easy to sell bonds, but it is darn hard to sell the junior securities. We sell the junior securities through bond and stock houses. By far the greater part of those securities are handled by bond and stock houses in and about New York. This is the center for whole country. Of course we have distributors; that is we have people who are in the distributing business that handle our securities throughout the east and the middle west, but the bulk of it is handled from New York City.

In a general way I am familiar with the return expected or exacted or usually realized by investors in other classes of business than gas companies, and with the rate of return [fol. 1511] over and above operating costs exacted and expected and usually realized by buyers of public utility properties. I am also familiar with the conditions and risks attending investment in gas properties in New York and vicinity, as compared with the risk in other commercial enterprises. The rate of return is based on the cost of creating the property, which consists of every attribute that goes to make up the property. In other words, it is both tangible and intangible, and the public use of it, ties that in with the fair value. The fair value they expect that the State, through its proper officials, will fix. When I speak of fair value, I do not speak of that as synonymous with original cost or replacement cost today. What I mean by fair value is what it would cost to duplicate the property, I mean right now, meaning the present day, which includes both tangible and intangible elements of value. The rate of return we have discussed has no relation to outstanding securities whatever. First, there is no fixed rule as to rate of return for every property. It depends upon how it catches the favorable or unfavorable conclusions of the man who has the money. In the first place, when it comes to raising money it seems to me that terms are used which, technically, are not accurate, and in the interest of accuracy I always endeavor to segregate the costs, because the costs are made up of many elements that [fol. 1512] can be put generally into two classes. One is the cost of getting the money, which means working up the financial scheme, getting in position to issue your

securities, arranging for your trust deeds and all that kind of thing, and paying the expense of somebody, either personnel of your organization or hiring some banker to do it, to go out and ring the doorbells and get in personal contact directly with the owner of the money and then induce him to buy. That is what we call the cost of getting the money. That is not the cost of the money at all. That is a part of the cost of the property, because you spend it to get the money, like bricks or mortar. The yield that you must get on the securities in order to induce a man who has the money to put it in we call the rate of return. That is the thing that interests the man whose house you go to sell him securities. He is not particularly interested in what your expenses are in seling the securities or, in other words, the cost of getting the money. When you form a new enterprise, suppose for instance there was no gas company in Brooklyn; there are a great many doubts about how this business is going to grow, what the revenue gross and net will be per dollar invested, it is a new business, it is untried, the promotor will paint beautiful rainbow pictures, the investor will discount a good deal of what he says, and the result will be that you will pay much more first for getting your money and second you must have a larger return to in- [fol. 1513] duce one to buy securities in a new and untried business. After your business is well-established, then if it is a large enterprise, your securitiese become better known and well-established, they can buy and sell them on the telephone and they are good collateral at the bank and you can get your money with less bait, and I mean by that less rate of return than you could have done in the inception of the enterprise. I am not using the term "cost of money," as synonymous with the rate of return. I do not call it cost of the money, I call it the rate of return on the investment. When I used the term cost of the money, I meant cost of getting money. I do not remember just how I did use the term. There is an absolute distinction, because they are entirely different things. Cost of getting the money is as distinctly a property or capital cost as the bricks and the labor that you put into the property. The yield, or rate of return on the money, is the return that must go to the investor as an inducement to

him to put his money into the property, and has no reference whatever to the expenses that you have incurred with circulars and prospectus and soliciting salesmen who have gone around to induce that man to put his money in the property. It is an entirely separate thing. I call getting the money, raising it, the expense of raising it, the cost of getting the money. I call the yield that you must give, the rate of return on the investment. I call it the [fol. 1514] yield, that is the rate of return, and the cost of getting the money is not the cost of the money. You would get the money first before you have any yield. It is the preliminary, or rather it is, if you build a building, you have to buy the brick before you put it in the building. When you are under the necessity of securing money for something, you have to get the money, and that is the cost of the money. As to launching a new enterprise and expanding an established enterprise, one is more difficult than the other, but many of the problems are common. In the initial launching of it money costs more, and it costs more to get the money, and also you must generally pay a higher yield for your money than you would later. New York City is rather large nowadays, it covers a good many suburbs and it would be more difficult to raise the money, and the yield that would be necesasry to induce the investment of money in gas enterprises would necessarily be larger to raise money in some of our rapidly growing suburbs than it would be in other parts of the city. For instance, it would be more difficult to get the money, and the yield would probably be larger for rapidly growing suburbs like Flushing and perhaps the upper part of the Bronx than it would be in the Boroughs of Manhattan and Brooklyn. Therefore it is hard for me to name a figure that would be accurate as to the whole town. I am [fol. 1515] familiar with the Borough of Brooklyn and the portion of it served by the Brooklyn Union Gas Company of the wards supplied,—Flatbush, what we call Flatbush, Gravesend, which is Coney Island, and the vicinity, and New Utrecht. I will assume the plaintiff serving this territory of Brooklyn, that it owns and maintains in this Borough of Brooklyn a system for the manufacture and distribution of carbureted water gas; that during the year 1923 it sold to 466,030 consumers 15,373,560,000 cubic feet

of such gas and 4,992,894,292 cubic feet to five other companies, for which purpose it manufactured 21,984,891,000 cubic feet of such gas; that the company has 1,017 miles of transmission and distribution mains; I can form an opinion of the percentage of return upon the value of the plaintiff's property necessary to induce the investment of money in the acquisition or construction of such public utility. I think I was incorrectly quoted. I said Flushing, not Flatbush. Prior to that I said Flushing. The investors in figuring the yield that is attractive enough to him to put his money in the enterprise necessarily bases that percentage on the value upon which the percentage is figured. That value is fixed by the state, whatever the law is. (The answer was read by the reporter.) There is no use for an investor to figure that he is going to get any specified percentage on anything unless he has some idea of what the principal thing is upon which the percentage is to be calculated, and when he puts his money [fol. 1516] in it he necessarily figures he is going to get a certain preconceived amount for its common stock or, if it is a fixed yield value, then he must know what that is, and he must have a reasonable expection that he is going to get it. Now, they usually have—they are naturally not experts nor lawyers, they usually have it in mind that it is going to be paid on the fair value of the property, but they realize that that fair value must be fixed by somebody and the law provides a method of fixing the value in order to get the figures upon which the percentage can be calculated. Eight per cent. or ten per cent. or two per cent. or six per cent. or one per cent. on X or on Y means nothing, because you don't know what X or Y is, and they usually in crude way figure that X or Y is the fair value of that property as it stands today, and upon that value so found by the duly constituted public authorities this rate of return will be computed. For instance, if X is the value of the property and the public authorities decide that X is ten million dollars, the yield will be figured on X, or in this case ten million dollars. This is to illustrate my point. If, however, the valuation is made less than that and he does not get the rate of return that he expects, he would like a great many other people who have been dis-

appointed and unfortunate in their investments, get out, if they can, and they will tell everybody to run from it because it is dangerous business, and when you want to get [fol. 1517] more money it will not be forthcoming. Capital for this kind of business must be coaxed, it can not be commandeered or coerced. It comes like kissing. It comes by favor. There are too many other things in this country that invite the investment of capital to put a man in a position where he must invest his money in gas or any other public utility. The class of investors which I have described, investors generally—they consider upon the basis of the fair value of the property as fixed by law. they must have and are entitled to have the fair return which I have described. I don't know how fully I defined fair value before. In my opinion the necessary percentage of return required to invite, to buy or build a public utility such as has been described is at least 8% upon the cost to buy or build at the time the trade is made.

[fol. 1518] S. Z. MITCHELL.

Cross:

I am president of the Electric Bond & Share Company. If you will look that company up in Bradstreet's you will find out what sort it is. We deal in public service properties. We buy and sell securities and we buy and sell properties. We also keep an organization of technical experts that do more or less in an cooperative way, expert supervisory work for our clients, to see that their properties are efficiently constructed and operated. We are interested in electric and power companies, also gas and street railways, to some extent, but not so large as we are in electric companies. I suppose that the securities which the Electric Bond & Share Company owns today have a market value of perhaps $40,000,000, but the aggregate capital, taking the par values or no par values, the stated values of all the companies in which we are interested today would aggregate about—in fact, I figured it up here the other day—would aggregate seven hundred and fifty odd millions of dollars, and the market value of the securities of those properties were approximately the same thing. That does not include anything like all the properties that we have

been in. We have bought and sold and dealt in securities of a great many other properties. I am merely speaking of the properties in which we are interested today. Our company is controlled by the General Electric Company. We do not own a large proportion of shares of the American [fol. 1519] Gas & Electric Company; we own only six per cent of it now. We did own and control that at one time; we bought it for syndicating purposes only. The American Gas & Electric Company has many subsidiary companies. Unless temporarily, while we are buying for syndicate purposes, we do not own and do not control anything. As to how we became interested in those different companies:—the American Gas & Electric Company, the Carolina Power & Light Company, the Lehigh Power & Securities Company, the National Power & Light Company, the Panama Power & Light Company and the Dallas Power & Light Company and the Dallas Power & Railway Company—I can state that approximately in each one, or generally, because I think that is a general rule applied to every one. It is our business to help promote the growth and the development of these properties. What we usually do, if we would find a property that was run down and in bad shape, and could be bought for less than what we thought the public authorities would fix the fair value, then evidently there might be a profit in it, if we would buy it and get our friends then to syndicate it, get our friends to take the securities. And then our specialists would get busy and help its clients and would improve the service and extend the facilities, and usually lower rates and, incidentally, why we would make some promotion profits, and also as long as we gave them satisfaction we would probably do all of their finance-[fol. 1520] ing. That is where the sale of securities comes in. It is largely for enterprises that we have been instrumental in creating, largely by getting a lot of rundown and decrepit outfits and putting them all together so as to get volume and diversity. That is why we have the holding company. We try to and do buy the securities of these various electric and power companies when we can. Sometimes we do it one way and sometimes another. There is no rule. We do not necessarily approach some bond and share house, to float these securities for us. We float them ourselves very frequently. We do not ring the doorbells

for all of them. We are ringing doorbells today for a great many properties. You might sell bonds through one house, you might sell preferred through another house, you might sell common stocks through other routes, and we also—if I may say right now, and this is what I wanted to say awhile ago,—you might seem to have the idea that my answer in the beginning was to the effect that we did only a wholesale business in securities through other dealers. That was the point that I wanted to correct, because that is not true. I do some selling to the investor myself. In the first place, we have a retail trading outfit in our own office. We buy and sell everything that comes along, everything that looks as though it was worthy of trading in; we have an active trading house and have had for years. Not necessarily the [fol. 1521] things that we are in, but anything on a common basis, just the same as a Stock Exchange house. We are doing that all the time. Further than that, we have what we call a consumers' campaign organization, to sell to the customers of our properties, and to some extent to the employees. For instance, the sales in that department alone, I happened to look it up the other day, is approximately ten million dollars for this year. The employees are relatively small, but the customers, I mean, the customers of these lighting properties, where we are speaking of ringing doorbells; that is practically ten million dollars this year, since the 1st day of January, and that will give some idea of it. I am speaking of the securities of the companies. They are not Electric Bond & Share Company's stock. A great bulk of these securities are not handled through stock and bond houses, so far as the number of stockholders is concerned. So far as the aggregate money value is concerned, yes. In other words, we would sell a bond issue largely through other dealers. The preferred stocks we sell in various ways. We syndicate them, we sell entire issues, we sell pieces of issues, we act as syndicate managers. We sell direct to the individual by ringing doorbells in the towns in which we do business, and we are running now at the rate of fifty million dollars and fifty thousand new stockholders. That means some doorbell ringing. Our Trading Department is buying and selling everything, that is all properties that we are interested in and properties that we [fol. 1522] are not interested in. It is not only confined

to our properties, that we do buying and selling; we buy and sell everything.

Referring to our last issue of bonds we were interested in, that was of the Houston Light & Power Company,—that is a small issue. We have sold Houston and Idaho and Utah and Memphis and Little Rock, and we are just selling eight millions of Birmingham, Alabama, just now, and Ohio Power, and a great many things. We do not market those ourselves directly to the investor. Those were bonds. The things I am talking about now are all bond sales. We have sold those to dealers, and they in turn have interested their clientele. That is only about 60 per cent. of the money. The other 40 per cent. is raised on preferred and common, and that is the difficult thing to sell, the junior stuff,—not the bonds,—that is easy. When we have a floatation of bonds to make, we approach different bond houses. Regarding our method of interesting a bond house in a floatation of bonds, what they usually require of us, in the matter of statements of earnings and statements pertaining to our physical property and future development and prospects of the company, some are more fussy about certain things than others. It is like the human equation, it is not uniform by any means. The general things that they want to know are about your franchises. They want to know whether you have got a short time franchise or an unlimited [fol. 1523] franchise, as to terms. They want to know what the onerous conditions are, if any. They also want to know what is the physical condition of your property, whether it is a regulated monopoly or whether it is in a competitive situation. They want to know how you are getting along with the public and whether or not you are in a community that is constantly harrassing you and playing politics all the time, and every other uncertainty that they can think of. It may make a decided difference in one place whether they will go in, and in another one, whether they will not. If it is a community that treats capital fairly, you can get your money for less cost and more readily—that is, you can get your money for less yield and more readily. It depends upon the attitude of the particular locality toward the utility, to some extent. They want to know about the earnings. They want to know that you ought to be able to earn at least twice the interest on your bonds. They do not want you to have too big a proportion of bonds. In other words,

they have the same rules of business prudence about that, that the savings banks would have, or the dealers in real estate mortgages. They would want to know that there is a good margin of equity there to protect their bonds. We submit to them everything on earth they want. We turn them loose and say "God bless you, go to it. What you don't find, just ask for it, and we will give it to you if we can." Any bond house of any size, the best bond houses, [fol. 1524] have appraisal engineers of their own and they turn them loose and turn loose an auditor, an expert evaluator, and go through it for themselves. They are from Missouri; you have got to show them from beginning to end, before you get through. Assuming that we approach a bond house for the floatation of any securities, they send their own engineer and usually accountants, to make a valuation. They go over the books very thoroughly. They won't show you their reports. I know in a general way the element as to the amount or how they figure the valuation in the valuation which usually controls the bond house as to whether they will accept the floatation or not. Sometimes I do see the valuations, sometimes they give them to me. They do not always show me the full report. As a rule when they show you the valuation, they try to make that as small as they can so as to get you down on the price. The buying end of a bond house is radically different, radically distinct from the selling end. The buying end are pessimists; they bring up every possible thing they can think of—that is the way it works out. I have known of many cases where the selling organization came around while the buying organization was at work and the head of the house would shoo them out; they didn't want them to hear each other. Sometimes we see these valuations that are made by the engineers for these various bond houses as a general proposition. In a [fol. 1525] general way I know how the engineer treats the various intangible elements of the property. They do not figure good will. They figure established business. They don't call it good will. Engineers don't usually allow anything for good will, but for established business, they do. That is another way of saying the same thing. They take into consideration that the return would have to be a certain per cent. upon the present value of the property. The present value of the property, which is more than the cost

to reconstruct it, by a long shot. It is more than the cost of reconstruction. The valuation is substantially more than the bare-bone—the fair value of a going concern, with thousands of customers is much more than the bare-bone value of building a property. That has nothing to do with what the bond house will accept. That is a horse trade. The bond house man makes a valuation for his purpose, and he makes a valuation based upon the present value of the property. That is not the present cost; it is something more than that. They may value it by adopting unit prices as of today. "We think it is worth so much money, but we are not willing to buy securities for over so much per cent. of the value, and that might vary." They always discount the valuation; that is their business. In determining the present value of the property, one of the elements they take into consideration is the cost of reproducing the property as of today. In figuring the value they use unit prices as [fol. 1526] of today in their efforts. I don't think they call pavement over mains good will. They call it established business. Going concern value or established business are other names for it. Bond houses usually employ that term, —going concern value or established business, either way. If I were going to construct this property here, I would of course have to restore it to its present condition. I would have to dig up the street and put the streets back in their original condition. I suppose the engineers for the bond houses take into consideration that element. I know that we have got to earn a certain amount of money upon this present value. As to whether or not that is an element which they adopt in the valuation, in every case this is not an accurate science, when I go to buy bonds—it is a horse trade. They get in every value that they can and they bring in everything they can, everything they could plead in case of confiscation as against their bondholders, and then they do not try to see how many bonds they can get, but how many bonds they can get which will be amply secured against every possible contingency, including politics and bad law and everything, and consequently you can take a case where they would say that in their opinion this property is reasonably worth X million dollars, and they might say "We would not take a bond issue of more than fifty per cent. of that; and there might be another case in which they would

[fol. 1527] say they might take a bond issue at par or eighty per cent. of it, on the property. That is another way of discounting uncertainties. Uncertainties is the human equation, not knowing what the Court is going to say, and not knowing just what the attitude of the public is going to be, and whether there is going to be competition or what is going to happen to it. It would be correct to say that the valuation that, like the earning power of the company, involves a consideration of these other factors. They take everything into consideration, or try to. I said the bond houses would not float any bonds unless there is so many times the interest on those bonds earned. I tried to make it perfectly clear that we do not finance these properties on bonds. The bond man is interested in what is available for his bonds and, naturally, they figure that the company would not be prosperous unless the junior finance was available to take care of the growth. In other words, they know that you cannot grow on bonds, but that you must sell the junior stuff, otherwise you would not be able to serve the public and you would get into trouble, and the wise fellow thinks of that and the big bond houses are pretty wise. Now, it might be that one company would have one and one-half times the interest on the bonds, and another one might have six times the interest on the bonds, and yet the one and one-half times might sell practically as well as the one that was earning six times the interest on the bonds. [fol. 1528] Why? Because the one that was earning the one and one-half times, every element of risk might seem to be minimized and the chances would be better. The one that was earning five times the interest on the bonds, they might say, "Well, we don't think they can maintain those earnings," or something else like that. It is not true that it bears largely upon the earnings over and above the bond issue, rather than the valuation of the property; that is, the earnings of the company. I have stated what the company must earn on the fair value of its property, as I have described it, in order to interest investors. In this case I should say it would be at least eight per cent. Counsel is figuring on bonds only. I stated in my direct examination that the return on a particular security and on many securities, hasn't a thing in the world to do with that. I can say this, that anybody who is figuring on pavement over

mains, to protect their investors, their clients, which is what they always do, they will try to come to some conclusion as to how that paving will be figured by the Courts, when it comes down to a case of last resort. If they think that the paving will be included, they include it. If they think the paving will be thrown out, obviously they would not include it. I think counsel looks up the law generally and tells the engineer of the bond company as to whether that term should be excluded or included, and what the law is. My recollection is that in cases of sales it has been in-
[fol. 1529] cluded. I think there is a good deal of argument as to whether it should be included in the question of a rate of return. In order to get money for this concern, they must earn eight per cent. on a fair valuation. In that fair value which I referred to, some include the pavement over mains as an element. I cannot tell without having them look it up and see whether I included the element pavement over mains. When we make a valuation, our counsel advises us as to the law. When I used the term "fair value," I meant to include pavement over mains—in the case of a rate of return, as to the question of a rate of return. I know they did it for many years. I know there has been a lot of legal fuss raised as to whether it was proper, but I could not tell how it was done in this case. When I used this term fair value and when I spoke of 8 per cent. and when I used the term rebuild, or buy,—the factor of expense in repaving, if the investors' money paid for it, was included, if they would be permitted to earn on it. If they did not pay for it or were not permitted to earn on it, then no. I don't know whether it was in or out of my definition as I used it. All I want to know, or all the investor wants to know is that he will get 8 per cent. on all the money that he invests, that the investors put in it. If they spend it for paving, they have to get 8 per cent on it or they won't spend it, otherwise they may not get but 6 or 7. When I initiate a new plant the investors
[fol. 1530] have some in it when they put up the money; they put up the money before there is a plant, before they have the plant they have the money for the plant. It would be included if the investor had invested in the pavement over mains, but when we raise money for the initial construction of a plant the investors would not have anything

but money, if no plant had been put up. There would not be any plant. When they build the plant they would have paving, and they must get the return of 8 per cent on the money which they put in the paving as well as 8 per cent on the amount in mains. We would have to raise a sum of money to build a plant from the ground up. That is what I had reference to when I made these answers that it would require 8 per cent upon the value of the plant, if we were to build the plant from the ground up. They would have first to get the money to do that with, to do the work. In getting the money in order to reconstruct or to build a plant, pavement over mains is an item which I have included.

[fol. 1531] The engineers will estimate every possible item of cost to create this property. The first thing, you have got to have a development of the project, somebody has got to conceive it—if you want me to give all the elements. Somebody has got to conceive the idea. They will say "It would be a good scheme to have a gas plant over in Brooklyn," and would figure out where it could serve the public advantageously, then we would hire some engineers and gas sharks to figure out where he ought to locate it, what streets to locate the mains on, what it ought to cost to build this thing, then he would figure how much it would cost to get the franchise and whether you could get a franchise or not, and what the terms of it would be and all those things, and he would hire lawyers to advise him in the thing, and then after he got all of that done, he would say well, I am doing a whole lot of the work, what am I going to get out of it, am I going to get anything for my services, or promotion fees or something else, and how much will that be; and I have been in this business for thirty years. The next thing he would say, well now here, I have talked to the Mayor and the City Council and they will give me the franchise, my engineer says to go out such and such streets will cost so much money and there are so many people living there and you can sell so much gas a year and it will grow at such a rate, and his gas engineer would say it would cost so much to build it. He [fol. 1532] would say in the estimate of cost there is digging trenches and laying paving, and that is just as much a cost as it is to pay for the pipe or a machine or a gas

holder, and every element of cost must be included, so that the cost of the project would include a consideration of the amount of pavement to be removed and replaced. Every item of cost that went to go into that gas plant, that has got to go into capital account. Where else can it go? In that cost or in our term which I used, fair value, is comprised the going concern value of cost of establishing the business. As to how that would be arrived at, in accordance with counsel's opinion, and in accordance with my definition of fair value, in one case you might get a full return on your money in the first year, in the others it might take five years. If you lost money in it, suppose the first year you had red ink, and the next year you made half of one per cent, and went up a half of one per cent a year, money at 6 per cent compounded would double itself about every eleven years, and if you took all that length of time to administer and develop the business, certainly a plant that has developed itself to that particular point is worth more than it was when it started with the same construction expenditures without any business, and that is quite important if you are going to build something, because if you are going to get your return right away that is one thing, but if you figure it will take ten years to get it, then you want a promise of more than that. I include in my [fol. 1533] definition of fair value a capitalization of the early losses of any initial concern, until it has been made up, and that the investor does not pay any attention to. The investor does not figure with any such fine instrument. The investor figures on the chances or probabilities. If the probabilities are that he would get it, why, he will put his money in; if the probabilities are he won't get it, he won't put any money in, and he doesn't go into the fine points of how you figure it. He knows that the last say is the public authorities. If he thinks that they will permit him to earn on the total valuation that will give him 8 per cent. on his investment, he will go into it, if he doesn't, he won't. If you attempt to market these securities you have prepared for your prospective investors a picture, and that picture contains factors which arrive at what I have called fair value. In drawing that picture which, finally, ending in that which I call fair value, you included in there a few years during which the company should meet losses, and

charge up to this fair value the amount of those losses for a period of time from the inception to the time when it could be looked upon as a going concern and paying its way. This fair value should include some item for losses during the initial years of its existence. When I used the words fair value, I included it. The property would be worth that much more; whether you wanted to sell it for [fol. 1534] that much less is another question. When I used the term fair value and applied it to an old settled concern which has made up its initial losses, that definition did not differ from when it is not made up. It is just the same. The initial losses is an element of value if you have a going business. It is like good will in a department store, or something else. They do not use the term good will, but it is an established business, it is worth something. The Brooklyn Union Gas Company without customers and without any services would be worth something; with the services and established business, as it is today, it is worth a great deal more, and that is an element of value which should and is being taken into consideration in every purchase, so far as I know. I considered that when I spoke of fair value, or rebuilding, within either of those terms I included some such element. I did not include in my definition of fair value the rights to have the mains in the streets, not unless I paid for it. That is, I included in my definition just the amount of money that would be necessary for the company to obtain that right from the authorities. If there is money spent, somebody paid for it, in building that enterprise, and to only that extent I have included it, that is unless it is exclusive. If it was exclusive, so that the State could not change it, then it would be valuable, maybe, but I take it that the State can do that, they can grant another franchise if they [fol. 1535] want to, if it is a public convenience or necessity. In my term fair value that includes the cost at that time, the time of the transaction, that is at least 8 per cent of the cost to buy or to build the property. If you pay more for it than the value, I should say no, I should say it should be on the fair value rather than the cost to buy, because the cost to buy is trading. The cost to reproduce is a way of getting at fair value. Fair value is the amount that the public will permit you to earn on. That is my definition of

fair value. The amount which the public authorities, the State of New York, will permit you to earn on, and the Constitution of the United States and the State; what the law will permit you to earn on. That is the only thing the investor is interested in. If he can not be permitted to earn on all the money he puts in, he won't go in it first. If he buys something he might buy it at half price, or you might halve its physical value, or you might buy it for five times the physical value, dependent altogether on how hard up and how much pressed the seller was or how foolish the buyer might be, and if you paid four times the physical value, I would not expect you to earn on that price; if you bought for half the value, I would expect you to earn on the value; so you really get back to what is the value of the property, and not what you might pay for it in a sale. What you get back to is the value of the property as allowed by law. Testifying substantially to the effect, that [fol. 1536] whereas a regular public body such as the Public Service Commission is in existence in a given State and stocks and bonds and other securities of like nature may be issued by a public service corporation only by permission of and under the authority of such a regular public body, then the aggregate amount of the securities thus authorized to be issued constitutes the fair value within the meaning of the investing public, and they want to see at least 8 per cent probable income upon that valuation, is absolutely not what I mean. I stated some time ago that the securities issued has nothing whatever to do with the value of the property for the purpose of my testimony at least. There are properties that are worth many times more than the par values of the securities; there are other properties that are worth less than half, perhaps, of the securities that are outstanding. Properties may be worth something today on a replacement value and would be worthless fifty years from now. Properties may cost ten million dollars and judiciously and properly and prudently built, and might not be worth anything for junk because the earning capacity is not there. All of those things must be taken into consideration when you fix the fair value of a property. If you should build a water power and there wasn't any water there, evidently the property would not have much value, although the cost might be very much.

There are many instances of that bad judgment. The issuance of securities, I say again, has nothing whatever [fol. 1537] to do with the value of the property and should be, in my opinion, wholly disregarded in figuring the value of the property. The value of the property should take in all the elements that are based on common sense and approved by law. Those are the things that make up the valuation of the property, and every element of value should be considered in reaching it, but certainly not base it on the amount of securities that are outstanding. Fair value includes in a way, a consideration of the prospective earnings of the company. There might not be a field for the property. If you built a gas plant in the Sahara Desert which cost ten million dollars and there was not a soul within a thousand miles of it, the fair value would not be very much, although the reproduction cost might be quite high. If you built it in the City of Brooklyn or in the Borough of Manhattan, where there was a market for gas, then the fair value would be higher. The fair value—the elements of cost you take into consideration in both cases, but the fair value of it if it had no business, no possibility of earning anything, I should say would be the junk value. That is the way I have used the term fair value. That is one of the things. There is a limit as to what you can earn, because the regulatory powers would hold you down. For instance, if you could charge ten dollars a thousand for gas in Brooklyn and it cost you 50 cents and you could lawfuly do that forever, then that would be one of the elements in value, and you would say it would be a very large value. [fol. 1538] That would increase my fair value, but under regulation you are not permitted to charge any more than is just necessary to get the money. That still would not be any good if there was not an opportunity to sell your product. You might have issued securities, for this gas plant at par in the Sahara Desert and you may have ten million dollars of securities issued lawfully to build a gas plant on the Sahara Desert and the securities would not be worth the paper they were written on because it has no fair value because you can not sell it. Now, I only mention this to illustrate that in getting at the fair value of a property once more, and I have said this three or four times, you must take every possible element into consideration

that has a bearing on the particular property, located as it is, and taken at the time that you are having the discussion.

[fol. 1539] Brooklyn Union Gas Company

New York, April 21, 1924.

THOMAS P. PAYNE

Cross:

Mr. J. A. Dykman: When Mr. Payne was last on the stand his cross-examination upon the subject of the account Plant & Patents was suspended pending preparation of a statement upon the subject with which we were then dealing, which I now want to make, sir.

Prior to 1909 methods of accounting and bookkeeping were not standardized and entries with respect to retirements and withdrawals of property were not then made under the accounting rules in effect since 1909. Although other fixed capital accounts contain credits for property withdrawn from service, no withdrawals appear in Plant & Patents prior to 1909. The account Plant & Patents represents (a) building, (b) holders, and (c) gas-making apparatus. All the holders except one, which has been actually written off the books, are still in use; that is, the holders acquired in 1895. Practically all the buildings and some of the gas-making apparatus are still in use. Such gas-making apparatus constituted not more than 40 per cent. of the amount at which the account was opened. If the full amount for apparatus is deducted, such deduction will exceed the amount which would have been credited had withdrawals of apparatus been made, and the excess will offset that portion of the account representing buildings withdrawn from service.

Mr. Cummings: Of course, I rather expected that Mr. Dykman would take that position on the question of whether withdrawals had been made from his account Plant & [fol. 1540] Patents, and he seems to have stated that there were no withdrawals made. Now, up to that point I think the statement is all right, but now he goes further and gives a little testimony of his own, it seems to me.

The Master: That is the next question, whether this statement of counsel will be accepted in lieu of evidence of the witness.

Mr. Cummings: Yes, in lieu of evidence of the witness, and upon that point I certainly do not accept it.

Mr. J. A. Dykman: The facts, sir, stated in this statement appear in evidence. It is entirely based upon the evidence in the case and prepared with considerable care, so as to state the evidence.

Mr. Cummings: I question the last part of your statement.

Mr. J. A. Dykman: Well, what particular element?

Mr. Deegan: Take, for example, Mr. Dykman, "Such gas-making apparatus constituted not more than 40 per cent. of the amount at which the account was opened." Whose testimony is that?

Mr. J. A. Dykman: That Mr. Cummings proved himself by putting in evidence Mr. Blanchfield's calculations of the proper charges to the subsidiaries. That is in evidence on behalf of the defendants.

Mr. Cummings: Does Mr. Blanchfield's calculation show the percentage of machinery that was on hand in 1895?

Mr. J. A. Dykman: Yes.

Mr. Deegan: There is no underlying data for that, is there?

Mr. Cummings: No living man knows the amount of machinery that was on hand in 1895.

Mr. Deegan: As I recall it, we were not able to get any [fol. 1541] testimony, any detailed testimony to speak of, about gas-making apparatus, although both Mr. Bush and Mr. Jourdan were questioned about that.

Mr. Cummings: Yes, and they could not remember very much about the equipment that was on hand. Surely Mr. Blanchfield, a mere child then, doesn't known anything about it. Further than that, there is a statement there respecting the buildings and as to the present condition, you might say, of the old buildings. Now, you will recall that I questioned Mr. Jourdan about the buildings and he said that they had been altered and changed, and, as to one works, I think it was the Metropolitan Works, he testified that all set of buildings had been constructed and, in so

far as the other works are concerned, I think you will find there are practically none or very little of the original buildings now standing.

(Informal discussion off the record.)

Mr. J. A. Dykman: The effect of this statement is as follows:

The account Plant & Patents was opened in 1895 at approximately $10,000,000. If 40 per cent, or approximately $4,000,000 is withdrawn, there will remain $6,000,000 representing holders, buildings and gas-making apparatus acquired in 1895 and still in use, the $4,000,000, in other words, representing buildings and gas-making apparatus withdrawn from service prior to 1909, it appearing in the record that the one holder which has been withdrawn has been actually credited in the account.

[fol. 1542] Mr. Cummings: Then I understand that there should be, in your opinion, credits made to the Plant & Patents account to the extent of about $4,000,000 for the withdrawals of plant apparatus and buildings such as have been withdrawn?

The Master: In addition to the one holder.

Mr. Cummings: Yes, in addition to the one holder.

Mr. Deegan: Up to 1909?

Mr. J. A. Dykman: The plaintiff, for the purposes of this litigation, makes that concession.

Mr. Deegan: Between the years 1895 and 1909?

Mr. J. A. Dykman: Right.

[fol. 1543] As reported on the Gross Earnings Tax Report for 1923, the total interest received by the company was $874,582.76. There is interest on the subsidiary companies' bonds of $339,430:

Interest on liberty bonds	$2,805.59
Interest on United States Treasury Certificates	39,224.26
Interest on United States Treasury notes	36,287 91
Interest on Brooklyn Union Bonds	1,900.00
Interest on Subsidiary companies open accounts	243,373.52
Interest on bank balances	211,561.48

We paid a dividend of $1,440,000 which represents 8 per cent. We were allowed 4 per cent or $720,000 and that leaves a balance of $720,000 which is figured at 3 per cent. The tax was 3 per cent of the excess over four, $21,600. There is a portion of the tax which we pay because of sales of gas to the subsidiaries. I haven't figured that. I don't go into that refinement. It is part of the gross earnings [fol. 1544] tax, and I don't split it. I would have to make a computation in order to ascertain that. I gave the number of meters and also the number of services which our company had on hand, on November 4th, 1895. I cannot state the various sizes of meters and the various sizes of services which we took over on November 4th, 1895. I haven't the sizes. The source of my information as to the number of meters and the number of services was a record book in the office, just a memorandum book, that had that data in, from which our present records are made up. That book does not show the sizes. I would assume that that number of meters also includes the meters in the shop as well as out on the district in 1895. I should imagine it covers every meter that we have. I purchased meters shortly after 1895. Take our record of meter purchases in 1895 and 1896, we purchased in November and December, 1895, meters from J. J. Griffin & Company, and one shipment of 5 light meters in November cost $5.09. That was copied from the Meter Record Books, if the figures were correct. I have not that book here. I don't know now, whether it is correct or not. We can send for the Meter Record Book.

The first purchase was from the Maryland Meter Company, 3 light meters, July, 1896, $4.30 and in August $4.30 and December $4.30. In January, 1896, we bought some 3 light meters from the American Meter Company, $4.72. In November, 1895, we bought Griffin meters for $4.80 and in December for $4.75. Our 5-light meters, in November, 1895, we purchased from J. J. Griffin & Company, at $5.09. [fol. 1545] They were B meters and we also purchased other 5-light meters at that time for $6.08. There is a difference between those two meters. In December, 1895, we purchased meters of the same concern at $5.95. In 1896, July, we made two purchases from the American Meter Company, and one in August at the price of $5.98 for 5-light

meters. The purchases which we made from the Maryland Meter Company in July and August, 1896, were at the price of $5.41 for 5-light meters. I have stated that the $1,020,-919.88 which is set up in your opening figure of the meter account represented the cost of 113,067 meters and it represented the purchase price of those meters on November 4, 1895. I don't think the cost of installing them was represented by the figure, according to my understanding. That figure is at the rate of $9.03 a meter, whatever the division makes. $9.03 was the average price of the meters. When we withdrew our meters we should not have withdrawn them at approximately that same figure. We should withdraw them at the price the meter cost. We do not withdraw meters at an average price. It all depends on the size of them. We don't know what sizes we had and nobody else either. We withdraw meters at whatever price the meter cost. The meters in January, 1923, 3-light meters, were withdrawn in some instances at $4.16, some at $4.75, some at $4.30, some at $4.72, some at $4.65, and some at $4.33, all depending upon the particular time the meter was purchased. The 3-light meters were withdrawn from $4.16 up to $4.72, depending on when it was purchased, and the years which those meters had been in service from fifteen [fol. 1546] to twenty-five years has no significance whatever. It represents the number of years that that meter was old. The meters show the date of the installation and our book shows the date of the installation of the meter and that date runs from December, 1897 to April, 1907. Five light meters were withdrawn at $5.09, $5.95, $6.08, $5.45, $5.98, $5.95, $5.70, $5.23. Our 10-light meters, we withdrew in January, 1922 and they were installed prior to 1895. We withdrew them at $6.51. Our book shows a withdrawal of several 10-light meters installed prior to 1895, and they were all withdrawn at the price of $6.51. I also withdrew a 20-light meter, installed in June, 1892 at $9.26 and a 30-light meter we withdrew at $14.01. That was installed prior to 1895. It would be impossible to determine from our books the various sizes of meters that were taken over from the vendor companies. I don't know that there is such a record. There is a table in the office or a memorandum showing the prices at which meters were being retired, if we didn't know what they cost. If we

don't know what they cost, we withdrew them according to that figure. Whatever figures are in those books, they are absolutely correct. I don't want to testify on that average price of $9.03 because it doesn't mean anything to me. I am retiring a meter, whether it is a 3-light meter or a 5-light meter. If I know what the price is, that is the figure it is withdrawn at. If I don't know the figure from the bills themselves, I take this memorandum book. I cannot [fol. 1547] tell the price at which any particular meter was entered in the opening entry in my ledger or journal.

Regarding the debits to my meter account, I know the amounts charged into my meter account for additions and withdrawals of meters are correct. Since the year 1895 down to the year 1908, your figures simply represent the actual purchases whereas my figures represented charges to the meter account. I took where they had transferred them from one branch or from one company to another. It was a debit just the same. It doesn't make any difference where it comes from. Instead of charging it into stock, I charged it into the meter account and out again, as I transferred it from one branch to another, a debit and a credit. The total additions to your meter account from November 4, 1895, down to December 31, 1908 was approximately $1,479,780.16. My total credits to the meter account were from the year 1895 to December 31, 1908, $2,010,000. The credits on the sheet shown me, are the actual withdrawals and don't include transfers. I don't know the actual withdrawals; I don't know how much the actual withdrawals were. I didn't go into that refinement. I didn't check the actual withdrawals. I didn't have any recapitulation sheet to go from, therefore, I did not make it up myself; it is not necessary. Those (indicating) are the sheets I had. I checked Sheet No. 2. The recapitulation sheet shows the amount of withdrawals from 1895 to 1908 as being $192,774.55. I did not charge as these meters were withdrawn. There is no depreciation on a meter, accord-[fol. 1548] ing to my figure. Now in 1897, they did not do that. In Journal No. 2, page 23, I find the title of an account called depreciation. The depreciation account is debited and the meter account is credited $620.40. That is for 96 meters. The debit account called depreciation is the same account exactly as the account today that we call

Plant withdrawn from service. It represents the meters withdrawn in this month of April, 1897, at the cost of the meters actual retirements. As you retire them, you credit your meter account and debit depreciation account. The system was exactly the same in 1897 as it is today, no change, except in the title of the account. At page 95, the amount credited to my meter account was $510.45 for 110 meters and on page 130, the amount credited to my meter account there was $425.95 for 94 meters. On page 160, the amount credited there to my meter account was $827.35 for 178 meters. On page 191 the amount credited there is $1,504.31 for 305 meters.

Referring to the cost of installing that length of main, the entry relating to the installation of 554 feet of 6 inch pipe on Herzl Street, east side, 9 feet 6 inches north of the north curb of Newport Avenue, 7 feet south of the north curb of Riverdale Avenue, is 554 feet long and it took 567 feet of pipe to lay it, but some streets have curbs that are rounded and you have to go around that or around subway construction. We used 567 feet of pipe. The average price of that was $1.39492 per foot. The installation of 123 feet of pipe on the same street, Herzl Street, east side, 260 feet south of the south curb of Newport Avenue, to 380 [fol. 1549] feet south of the south curb cost the company to make that installation of 123 feet of 6 inch pipe, $1.728. The first of those two jobs was commenced on May 1, 1923 and finished on June 28, 1923, and the second job which my attention was called to was started on June 18, 1923, and finished the same day, according to the books. The job on Euclid Avenue, east side, three feet south of the north curb of Sutter Avenue, to 3 feet 6 inches south of the north curb of Blake Avenue, we installed there 586 feet of 6 inch pipe. That installation cost the company $1.57743. That is the total cost of the installation. In each instance that shows the total cost of the installation. That job was started on June 11, 1923, and finished on June 14, 1923.

On the installation of 533 feet of 12 inch pipe on East 48th Street, the west side, 6 feet north of the south curb of Avenue J, to 527 feet south of the south curb of Avenue J, we used there 530 feet of 12 inch pipe, so our record states. We used a special also. That makes up the 533 feet and the total cost of that installation to our company $2.40369

and that job was started on June 8th and finished on June 15, 1923. Schenectady Avenue on the east side, 5 feet north of the south curb of Avenue J, to 394 feet south of the south curb of Avenue J. The length of the run there was 399 feet and we used 396 feet of 6 inch cast iron pipe and also a special and the total cost of that installation was $1.620877. The installation at Avenue J south side, 28 feet [fol. 1550] west of the west curb of East 46th Street, to 40 feet east of the east curb of Schenectady Avenue, there we installed 386 feet of four inch pipe and 15 feet of 6 inch pipe, and a cross and some other specials. The cost of that installation to our company was $1.53112 and that job was commenced June 1st and finished June 5th. My book does not show when any of the material was purchased that was used on those jobs. *My book does not show when any of the material was purchased that was used on those jobs.* On Ryder Street in June 1923 I installed 629 feet of 6 inch pipe. That job was started on May 29th and finished on June 4th, 1923. The cost of installing the 629 feet was $1.87207 per foot. On Remsen Avenue we installed 469 feet of 6 inch pipe. On April 16th, we finished the job on April 21st, and the cost of installing that 469 feet was $1.84729 per foot and then we also had another job on Remsen Avenue on May 16th and finished the job on May 18th where you installed 518 feet of 6 inch pipe. The cost of that installation was $1.85575 per foot. In July, 1923 I also installed some 12 inch pipe on Fillmore Avenue—318 feet. That job was commenced on June 25th, 1923 and finished on June 28th, 1923. It cost us to install that 12 inch pipe $2.338 per foot. There isn't any book showing the cost of installing services in June 1923. Labor is charged to the payroll charge sheets and the material is charged with the material and supply reports, and it enters into the service account. There is no record made up showing the total cost of installing each individual service. We [fol. 1551] withdraw our services at a certain stipulated regular price. When a service is withdrawn there is a certain price per foot, according to the size. The ¾ inch services are withdrawn at $10 per service; the 1¼ inch services are withdrawn at $11. The 1 inch services are withdrawn at $10. The 1½ inch are withdrawn at $15 and the 2 inch are withdrawn at $20. In February 1923, there

was a withdrawal of 4 inch main, $9.60 credited to fixed capital. 12 feet 4 inches of main withdrawn. That is an average price of about 80 cents a foot. That pipe was installed in November, 1893 and it was withdrawn in February 1923 and then in April 1922 we withdrew 25 feet of 4 inch pipe that had been installed in June 1873. We withdrew it at the price of $20. That is about 80 cents a foot and in June 1923, we withdrew 14 feet of 4 inch pipe installed in November 1890 at $11.20. That is about 80 cents a foot. That same month we withdrew 14 feet of 4 inch pipe which has been installed in 1901 at $7.35. That was about 53½ cents a foot and in October 1923, we withdrew some. We withdrew 13 feet of 4 inch pipe which had been installed in 1884 at a price of $10.40, about 80 cents a foot and in December 1923, we withdrew 15 feet of 4 inch pipe which had been installed in 1905 and that was withdrawn at $6.45, about 43 cents a foot. In January we withdrew 474 feet of 6 inch pipe which had been installed in the year 1915 at the price of $432.29, about 91 cents a foot. That includes pipe and specials. In these withdrawals we withdraw cost of installing them. When a run is withdrawn it is withdrawn at the average price of the cost of installation, in other words, everything that [fol. 1552] went into the cost of the run of the main is taken out when it is withdrawn. In April 1923, we withdrew 260 feet of 6 inch pipe which had been installed in 1909 at a price of $275.90, an average of $1.07 a foot. In April 32 feet of 6 inch pipe which had been installed in 1910 at a price of $29.70 or 93 cents a foot had been withdrawn. In May 10 feet of 6 inch pipe which was installed in 1890 at $12—$1.20 a foot and that same month another additional 10 feet of 6 inch pipe, but a different location—a different location at $12—$1.20 a foot and in June we withdrew 16 feet of 6 inch pipe which had been installed in 1890 at $19.20, plus the specials was $1.20 a foot. That same month we withdrew 9 feet of 6 inch pipe which had been installed in 1915 plus specials and that was withdrawn at $35.19 which represented a cost of $3.91 a foot. We have got salvage there for one 6 by 6 cross amounting to $10.98. In July we withdrew 15 feet of 6 inch pipe which had been installed in 1890 at $1.20 a foot. In April 1923, 32 feet of 6 inch pipe which had been installed in 1910, and also with-

drew one 1 by 8 cross and two 12 by 8 reducers and we withdrew the cross at $12.32; two reducers at $12.10. 32 feet of pipe at $5.28; that was the scrap value. The total value was $29.70, that is how it was withdrawn from our fixed capital. That is the cost of those specials when the run was installed. It might have cost us $5.28 to install 32 feet of 6 inch pipe at that time. $5.28 is the scrap value of that 32 feet of pipe which was taken up. We have withdrawn the cost of installing that by reason of the fact that [fol. 1553] crediting the fixed capital with the $29.70, I think that that $29.70 for 32 feet of pipe including those two specials, also includes the cost of installing. That is less than $1 a foot. I would assume that $1 a foot represents not only the cost of the pipe but of the specials, and also the cost of installing it. I would have to see the withdrawal sheet to find that out. To know the cost of installing pipe whether the pipe costs more or less than $1 to install, especially where you have two specials in your run of 32 feet, the conditions have to be taken into consideration. You can't take a bare entry on a page like this and draw a conclusion from it. I will say here that the withdrawal mentioned in April 1923, of one 12 by 8 cross, two 12 by 8 reducers, 32 feet of 6 inch pipe was withdrawn at $29.70 but to find out the ins and outs of it, I would have to work back and see the original entry. In all withdrawals, it is the practice to withdraw the cost of installing the pipe; that being true, it appears right on the face of it here that that amount of $29.70 represents not only the cos of the pipe and specials, but the cost of installing it. In 1910 it cost less than a dollar to install according to this withdrawal of 32 feet of 5 inch pipe. You can't take this one particular item and draw a conclusion from it. It covered also the cost of installation; that was the procedure.

In the year 1922 we received cash from consumers in the amount of $21,697.02 for services. In 1923, we re- [fol. 1554] ceived cash from consumers in the amount of $19,573.58. Both of those amounts of course have been credited to the service account. I cannot secure the amount of contributions made by the consumers in prior years because it required a great deal of analysis to go into the different credits to that account. That is the only reason. The figures made up in my schedules for 1922 and 1923 are

net figures after deducting that credit. In prior years, where I have not sufficiently analyzed the accounts to give the total amount for a given year, the contributions by consumers have been credited from time to time. In the schedule of figures which I have given it is the net amount which I have given, from which those credits have been deducted. I know nothing about Mr. White's schedules. I did not help prepare them, but I furnished Mr. White with the figures. Our records show always from the house line to the meter. It is our custom to charge the consumer from the house line to the meter, and in order to get the total amount contributed by the consumer, we would have to make a careful analysis of all the credits and all the debits to your service account and that would be a tremendous job. We have reported from year to year to the Public Service Commission certain figures in that respect. It shows credits to service accounts or mains accounts by reason of charges to sundry parties. In there, there are moneys other than contributions from the consumers. That figure will not check out exactly for that reason. That amount or the actual cost to the company for paving over mains alone since 1895 to June 1, 1923 was $221,303.73. [fol. 1555] That is up to June 1st, 1923. My books do not show the actual cost of paving over mains or services for the time prior to 1895. That is an estimated figure. The actual cost of paying over services as paid by the company from 1895 to June 1, 1923 was $293,518.57. We make a report of an estimated figure every year. That is a figure—I don't know who originally made it, but it is used every year in the franchise tax report. I didn't have anything to do with making it up. I know the people who made it, and I know they are very accurate people. It is done over there in the office. I think we have proved it in this case, so far that nobody over there would make a fake estimate. * * *

[fol. 1556] The prices at which we withdrew the services are: ¾ inch $10; 1 inch $10; 1¼ inch $11; 1½ $15; 2 inch, $20; 2½ inch $32; 3 inch $42; 4 inch, $62. In January 1923, after 11 years of service, one Pratt Iron Works pump, 4½ by 8 by 6 was taken out of fixed capital accessory equipment and works and placed in Material & Supply account, Metropolitan Works and installed in 1912. That was work

order 1232. At the same price which it originally cost, $110, in December 1923, work order 1484, we withdrew three 12 by 12 by 14 Davison pumps. They were installed in 1909, and withdrawn December 1923, that is fourteen years service and the initial cost of the pumps was $1,485. They were placed in Material & Supply account at $1,260. A deduction of $225 was made from their original cost. Two pumps were placed in the Construction Department, Material & Supply account and one of them was placed in the Williamsburgh Works Material & Supply Account. That is work order No. 1398; shows that one Terry steam turbine No. 721 was installed in 1911 and withdrawn November 1923. It was placed in the Construction Department, Material & Supply Account at $1,850, the same price at which we purchased it. That is likewise true of the next Terry steam turbine No. 720; one 706 and the next one 715. I haven't got 714. 715 is from the Metropolitan Works. We have two of them withdrawn from the Citizens Works, work orders 1452 and 1453. They were placed in our Material & Supply Construction Department account at $1,850. There are six Terry steam turbines retired after [fol. 1557] a service of twelve years and placed in the Material & Supply account of the Construction Department at exactly the original cost, which was $1,850. Referring to work order No. 1473, and after fourteen years' services we withdrew three 14 by 8¼ by 14 Davison Pumps which were installed in 1909 and placed them in the Material & Supply account at the value of $1,740. The original cost of those three pumps was $1,908.90, making a deduction of $168.90. Two of the pumps were placed in the Williamsburgh Materials & Supply account and one in the construction Material & Supply account. The cost of installation in 1909 of those three pumps would be the amount we credited fixed capital. The cost of installation is made up of three items. The pump was really $1,740. That is the value of the pump that we placed on it. I don't recall foundation $60.90. I haven't the connections. What I actually deducted, $168.90 might have represented the foundation and the connections to the pump, so that the amount written off only represented that, the foundation and the connections. The three pumps were taken over and put into the Material & Supply account at the exact

cost of the pumps themselves, because that is all that goes into stock just the pump.

In November 1923, work order 1461, we retired a freight elevator, Metropolitan Branch, installed in 1911. It had had twelve years' use and was placed in Materials & Supply at the original cost of $1925. That represents a good many authorizations. I don't recall that at the Fulton Works [fol. 1558] there was work to be done in the overhauling of the blower engine now at the Nassau Works and installing engine at the Fulton Works to replace the New York safety engine now mounted to the 103 exhauster. I don't know offhand the nature of the work there or the estimated cost of the repair $8,000. We have hundreds of those all the time. I do not memorize them. I haven't got any of the authorizations here. There are hundreds of those things. I know we have repairs all the time to various works and stations for shoring work and I know Miller, Mayville & Co. do a lot of our shoring work. I don't know the nature of this particular work that they are going to do. I know we have such services as the Holder Distribution Department, the services of an inspecting engineer from the Buckeye Engine Company. Sometimes in the installation of engines and manufacturer's inspector will be there to see that it is installed properly. There are such charges for making the customary yearly examination and supervise the major repairs necessary to all Buckeye engines in use by the Holder Distribution Department. I would have to look at the work order to verify the repair to the interior of the old meter house at the Williamsburgh Works. I will have to have the numbers of them, the work order because there are hundreds of them. It would take hours to get the authorizations. I have to go all through the binders. If you give me an idea of what you are trying to get at, if the work order said it is charged to repairs it won't alter the fact any by having the work orders here. If it is [fol. 1559] charged to repairs that is the fact and that is the way they have been charged. By looking at the work order and having me say yes is not going to alter the fact any.

We purchase our oil on so many thousand gallons at a time at a certain price. We are supposed to pay for it as the bills are rendered. We don't get thirty days on it.

We receive the bills for oil through the month. Years ago we had bills payable to the Standard Oil Company for oil because we didn't have the money to pay for that right away but not in the last two years. I show you a contract made between the Standard Oil Company of New York and the Brooklyn Union Gas Company, of October 25, 1923.

Referring to Plaintiff's Exhibit No. 215, it is agreed between the parties hereto that payment shall be made in cash on the 20th day of the month next succeeding for the previous month's purchases, or on demand thereafter. We pay our coal bills as we get them, the same way we pay all our bills. I could not say offhand what provision is made by the coal companies for our credit but I am almost sure that we get the usual thirty days which to pay a bill. We pay for pipe and meters and all our other supplies just as we receive the bills. That is, after the mechanics of the office are taken care of, the bills are ready for payment and we pay them, if we have the money. The pipe concerns and the meter concerns extend a discount. That is the average, thirty days. The regular trade terms as to a dis count for payment within ten days, I am not so positive [fol. 1560] about that the pipe bills, but most of the large concerns do give us a cash discount date, and we try to take advantage of that. * * *

[fol. 1561] The cost of repairs to meters since June 1, 1923 were $202,595.15. The repairs of meters from June 1, 1923 to December 31, 1923 was $202,595.15. The repairs to services for the same period was $48,555.81. The repairs to mains for the same period was $72,378.37. The item of materials and supplies includes coal and coke, water [fol. 1562] gas oil. In December of 1923, we carried over more coal, or twice as much coal as we did in December 1922. I have not the amount of tons that we had on hand but the dollars and cents. There is some variation in our unit price from 1922 to 1923. In fact in 1923 it was high. I haven't here the amount of pounds that we carried over. I know this, that the increase in the coal storage of 1923 over 1922 is on the lines of self-preservation. We would rather have enough coal on hand in case there was a strike than not to have enough coal on hand if there was one. We carried over in December 1923, over a million dollars worth of coal more than you did in 1922. The figures show

that. I think I could get that figure. The Public Service Commission reports would show how many tons more we carried over. December 1923, we had 151,176.76 tons. In 1922 we had 66,294.36 tons. I couldn't say whether our coal storage was approximately that, 151,000 tons. All of those materials and supplies are used in making gas, no matter where it goes and also the amount of appliances is included in that. That is, the appliances which we sell to the consumers, gas stoves and ranges and things of that kind. The balance of gas appliances December 31, 1922 was $193,896.17 and December 1923 was $277,614.19. That is the balance of gas appliances which the Brooklyn Union Gas Company had on hand. I don't know what the oil storage was. The number of gallons of oil we had on hand December 31, 1922 was 4,373,879 and in December 1923, we had 3,890,205 gallons. For the year 1922 we used 81,283,747 [fol. 1563] gallons and for the year 1923 we used 77,396,899 gallons. I don't know our storage facilities for gas oil.

In 1922 the increase in cash was owing to the impounded moneys being turned over, the money impounded on the last rate case. I don't think it was due to the issuance of any bonds. I had forgotten for the moment the issuance of those bonds. The 7 per cent convertible debentures was October 31st, 1923. We kept eight or nine million dollars of cash on hand for ten months there. It probably came from the fact that we isued some bonds in May, 1922. I had lost sight of the bonds for the moment. If I am correct in that date some part of it also came from the fact that we took over the excess moneys. Your present idea in part is that the money was not derived from the excess moneys, but it was derived because of the bond issue. I have nothing here to indicate how much of that money was derived from the sale of bonds. You would have to analyze the cash account to get that. I think that about covers it. I think that same explanation will apply for the next ten months. That money was expended for whatever purpose it was needed. * * *

[fol. 1564] I have not told the balances of our accounts payable. The liability side of the balance sheet is full of them. We have items there which would be treated as an account payable. I have

Our consumers deposits	$1,873,830.70
Miscellaneous bills payable	1,236,885.23
Dividends declared	360,060.00
Some interest on funded debt	317,270.66
Some interest on unfunded debt	514,874.79
And some taxes which I will have to pay	518,395.82

[fol. 1565] I am reading from the Public Service Commission report, the report to the Public Service Commission December 31, 1923. In my fixed capital ledger, fixed capital account, part 1, Volume 25, page 11, there are no accounts payable. I was reading from page 19 of the report to the Public Service Commission for the year ended December 31, 1923.

(Pages 18 and 19 of the report is considered as Plaintiff's Exhibit No. 281.)

On December 31, 1922, the balance of accounts payable was $1,275,300.22. On December 31, 1923 it was $1,300,-898.59. * * *

[fol. 1566] Brooklyn, New York, April 23rd, 1924.

THOMAS P. PAYNE

Cross:

I am unable to tell the number of the various sized meters that were taken over. The bulk of the withdrawals of meters from the vendor companies are 3-light and 5-light meters. Of course they are scattered all through the different sizes. The bulk of the meters that I now have on hand are 5-light meters, the bulk of the meters in the district. People today use gas to a larger extent than they did twenty or thirty years ago. The five-light meters are growing and the three-light meters are being slowly discarded.

Mr. Cummings: Now if the Court please, I offer in evidence since you can introduce parts of reports made by the Company to the Public Service Commission—that part of page 46 which relates to gas holders. It shows the capacity of the holders, the year built and the type of

holder, and I also introduce in evidence that part of page 38 of that report to the Public Service Commission for the year ended December 31, 1922, which relates to the boiler equipment in place for that year showing the various boilers the company had on hand, the year installed and other data relating to them; then also the data relating to the water gas sets which is attached to page 44 of the same report; showing number of sets, the year installed, the maker and other data with reference to the water gas sets which were then on hand. I also offer in evidence the data on page 45, showing the other works apparatus, consisting of condensors, tar contractors, scrubbers purifiers and other [fol. 1567] auxiliary works apparatus. The data is attached to the report made by the Brooklyn Union Gas Company to the Public Service Commission for the year ended December 31st, 1922.

(The portions of the report above referred to are to be considered as Defendants' Exhibit No. 47.)

Referring to my authorization No. 2184 was a repair for overhauling the blower engine at the Nassau Works and the installing of this engine at the Fulton Works to replace the New York City Safety Engine now connected to the exhauster. There was an estimate of $8,000 made by our company of the probable cost of that repair. That work up to December 31st, 1923 had not been completed. I could not go as far as that. The date of the letter was June 14th, that is the letter, giving the letter of authority number. The dates of the letters are no indication as to when the work was started. In any case, the work, as a general rule, is started before the letter goes through, so as to give them an idea of what it is going to cost, before they authorize the repair. In some cases the work is already started before the letter comes through. It is usual to start on a repair and proceed so far that we can tell about how much it is going to cost before we authorize a repair to be made. I think quite often that is the case. I cannot tell when this work was started. From an examination of my books I can tell the date of the first charge. As far as the week [fol. 1568] was concerned, it would be an indication of the probable time of starting the work. I have not the book here to refer to.

Referring to my authorization No. 2185—that was for the furnishing of labor and material for such shoring work at the various stations as may be directed by the engineer. Whatever the nature of the work may be; that is natural for repair work. There could not be any estimate of the cost made there as the extent of the work was unknown. The date of the authorization was June 14th, 1923. I should not think they would be able to tell why there isn't any estimated cost of the amount of work there until they actually got on the job and found out the extent of the shoring. I wouldn't want to say that on June 14th they were not on the job in that case.

Referring to my authorization No. 2189—the nature of the work that was completed there was services of inspecting engineer from Buckeye Engine Company, to make customary yearly examination of repairs of Buckeye Engines in use by the Holder Department. We did not begin that work until August 13th, 1923. I authorized that one on June 22nd I don't know that the work actually began in August. The first charge came through August 13th. There was an instance where I authorized the work to be done prior to the starting of the work because the amount of the work is well known in a case of that kind.

[fol. 1569] Referring to our authorization No. 2192, the nature of the repair covered by that authorization was repairing interior of old meter house at the Williamsburgh Works; and the estimated cost of the repair was $4500. The authorization was dated June 22nd, 1923. I could not tell when the work was commenced. I do not know when it was completed.

Referring to our authorization No. 2195 that covers replacing timbers in coal handling hopper tower in the dock at Williamsburgh Works; and that was estimated to cost $4,000. That authorization was dated June 22nd, 1923.

Authorization No. 2197 was for replacing the 36-inch diameter purge stacks for No. 7 and No. 8 generators with 42-inch diameter stacks at the Metropolitan Works; and the estimated cost of that was $11,000.

Referring to my authorization No. 2198 relating to 165 York Street and the property on Gold Street, the nature of the repairs necessary to those buildings was for putting the tenements in satisfactory and sanitary living conditions; and the estimated cost was $1,000.

Authorization No. 2199 related to repairing the two timber trestles leading from the tower to the coal storage enclosure at the Williamsburgh Works. There was no esti- [fol. 1570] mated cost of the repair in that instance.

Authorization No. 2203 is replacing piping and changing connections in the basement of the governor house at the Williamsburgh Works; and the estimated cost there was $3,500.

Authorization No. 2204 is for the erection of a standard wooden picket fence on the north and south sides of DeGraw Street to replace the present one at an estimated cost of $2400.

Referring to estimation No. 2205, the nature of that work was alterations required in two buildings leased at Third Avenue and Third Street, to be used as garages, the owners to reimburse the company for the repairs to the amount of $9,000; the estimated cost there was just $12,000 flat. No, I don't make it $18,000. I could not say offhand how much we spent. We would have to get other records in order to find that out. That is a repair to a building that we lease; and the owner of the buildings is to reimburse us for those expenditures up to $9,000. We have to spend more than that, to make it of use to us.

My authorization No. 2212 is for the necessary repairs, alterations and so forth, to still house purchased from the government, to be used as a machine shop and the amount is $42,000. We have no estimated cost as yet. I have the [fol. 1571] information that the estimated cost was $42,000.

My authorization No. 2215 relating to replacing the worn linoleum at the general office building, 176 Remsen Street—that work was commenced about November 24, 1923 and my authorization was in July, 1923, (July 10th).

Authorization No. 2217 is for the removing of the gas tester's laboratory from the old office building to the small galvanized iron building at the Williamsburgh Works. That includes the fitting up of the building at the Williamsburgh Works. And I have not any data here as to the estimated cost of that repair.

My authorization No. 2218 is for replacing the three boiler feed pumps now in the east end of the boiler house at the Williamsburgh Works, at $15,000.

Authorization No. 2219 is for the new separater tank and connections and the replacing of circulating water pumps at the Williamsburgh Works $3,800. Those two were authorized during July.

Authorization No. 2220 dated July 16th refers to replacing No. 1 Mayer generator with a round shell generator at the Williamsburgh Works, $29,000.

Authorization No. 2224 is for the necessary repairs to the plumbing system at the Williamsburgh Branch, $600.

Authorization No. 2226 is for making alterations at the [fol. 1572] repair shop, $3,800.

Authorization No. 2230 is for internal changes, rearrangement, additions and extensions to stairway, toilets, partitions, and so forth, also erecting a three story extension in the rear of the Metropolitan Branch $40,000.

Authorization No. 2231, I didn't say that was a repair. It is inventory and appraisal of this company's property by the Bartlett-Hayward Company. It is not listed as an authorization for repairs. There is no authorization, so we have got to have something on record at the office. It is in the authorization files. We have one place for all things.

Authorization 2232, repair the checker door frames on the windows, and machines No. 2, 3, and 4, Citizens Works, $1,300. That was authorized during August, 1923.

The authorization No. 2236 is for miscellaneous painting and repairs at the Nassau Works (Branch), and shop distribution department, 1024 and 1016 Fulton Street, $4,800.

And authorization No. 2236 is renewal to brick work on the two 250 horsepower Heine boilers, Nos. 3 and 4 at the Fulton Works, $4,300. I could not say offhand if we have two generator houses at the Nassau Works.

Authorization 2251 is for renewing the top on No. 6 tar tank, Metropolitan Works, $600. Works replacing the [fol. 1573] slate roof on the U. G. I. house at the Nassau Works was authorized in September, and renewing the top of the tar tank at the Metropolitan Works was authorized in October.

Authorization No. 2254 is for repairing the roofs and gutters and leaders on purifier house at the Metropolitan Works; and that was authorized during October.

Authorization No. 2255, repairs to the relief holder No. 3 at the Nassau Works, $8,000.

Authorization No. 2256, replacing the roof on the concrete pump house, and leader heads and offsets connecting gutter to leaders of the old purifier, Citizens Works. Those two last repairs were authorized during October.

Authorization 2263 is for replacing the purge stacks on Nos. 5 and 6 Williamson generators in the Williamsburgh Works at a cost of $1,000. That was authorized during November.

And authorization No. 2267 is for repairs and so forth to slate roof on the U. G. I. house, Nassau Works at an estimated cost of $1,300. That was authorized during November, 1923.

And authorization No. 2270 repairs to the slate roof of the old purifier house at Citizens Works and that was at a cost of $1,300. That work was authorized in Novem-
[fol. 1574] ber.

The nature of authorization No. 2283 was to replace the corrugated iron roof on the boiler house at the Water Street Station, $250. This was authorized during December, 1923.

Authorization No. 2284 was for pointing up to the parapet wall and the exterior walls of the general office building at a cost of $250, estimated, and that was authorized during December.

Authorization No. 2287 was for cleaning down the Fifth Avenue and 8th Street fronts of our Metropolitan Branch, at an estimated cost of $225, authorized in December.

Authorization No. 2305 for making alterations to the exhauster outlet connections at Metropolitan Works, $1,300. That was authorized during January, 1924.

Authorization No. 2306 for reinforcement and partially replacing the timber foundations under the separating tank at Fulton Works.

Authorization No. 2307, certain work on roof of generator house, $208.

Authorization No. 2320 recommended that H. Bergen, Test Engineer, and Joseph F. Quinn, industrial salesman, attend committee meetings of the Industrial Gas Section of the People Gas Light & Coke Company on March 26, 27, 28, 1924 with stockholders. Those are employees
[fol. 1575] of the company. I have no authorization there to repair the electric feeders, running through the yard, Nassau Works, on February 15th.

Authorization 2322, repairing the roofs at the various buildings, Equity Works, $3,400. That was authorized on February 15th, 1924. I could not give the cost of installing the last three or four holders of the company, from the books. That would require a detailed study.

The Brooklyn Union Company, during the year 1923 sold gas appliances and realized $1,020,610.04 from the sale of such appliances; the cost of the appliances so sold by the Brooklyn Union Company was $738,041.82. We did not make a gross profit on these appliances which we sold during the year of $282,568.21. That happens to be the difference between the credit side of gas merchandise and jobbing revenue account and the debit side of that account. But it is practically that figure. There is no great variation. The charges for the promotion expenses for that year were $269,683.13 as set up by the Uniform System of Accounts to be so charged. I cannot tell how much our net profit was in the sale of the appliances during the year 1923. We have a gross profit of $282,568.21, and then we have our promotion expenses of $269,683.13. Those promotion expenses include the New Business Department, demonstrations for the sale of the appliances, advertising, ad- [fol. 1576] vertising of all kinds for canvassing and soliciting, and the sale of appliances and the sale of gas. If you deduct the promotion expenses from the gross profit you would have a difference and that is all you would have. We furnish the subsidiaries with their appliances, and some of the appliances are sold at Remsen Street and are treated as having been sold by the subsidiaries themselves. In the promotion expenses, there is no expense there, or ony charge made for the rental of building in which the appliances are sold. That is, sell appliances here at 178 and 180 Remsen Street. There is no estimate of that portion of the building that is used for the New Business Department in either of the buildings. We exhibit appliances all over the city and in the subsidiary companies' territory. There are thirteen places where the appliances are exhibited for sale. The five branches of the Brooklyn Union Company, the four sub-branches of the Brooklyn Union Company, and the three outside companies, the subsidiary companies, Newtown, Jamaica, and Flatbush. That is what I mean, the subsidiaries. Those are outside companies.

They have their own demonstration rooms. The Brooklyn Union, alone, exhibits their own appliances in the establishments of the subsidiary companies, at 176 and 180 Remsen Street, that is two places; at the five commercial offices and the four sub-branches. The branch officers and [fol. 1577] the sub-branches are at 176 and 180 Remsen Street is self-explanatory. The Citizens is at Atlantic Avenue and Ashford Street; the Metropolitan Branch, Fifth Avenue and 8th Street; the Metropolitan sub-branch No. 1 is at Court and Union; Metropolitan sub-branch No. 2 is at Fourth Avenue—I don't know the corner—down in the Bayridge section. The Nassau Branch, 1024 Fulton Street; Williamsburgh Branch, 324 Bedford Avenue; the Williamsburgh sub-branch is on Myrtle Avenue, and the Brooklyn sub-branch is also on Myrtle Avenue, the lower end.

In this cost of promotion expenses there is no figure representing the value nor any allowance made, or charge made for any of the space utilized for the sale of these appliances. The subsidiary companies in 1923 sold appliances and realized from the sale of such appliances $368,352.73; but that was not entirely sales. That is probably within $50,000. And the cost of the appliances sold was $246,065.47 approximately. I would not like to state that the approximate gross profit from the sale of these appliances was $122,287.26 because in taking this revenue account you are taking credits into the jobbing account that do not always relate to the sale of the appliances. The balance of the merchandise and jobbing revenue account is $122,000. The promotion expenses of the subsidiaries for the year 1923 was $26,498.36. And deducting the pro- [fol. 1578] motion expenses of the subsidiaries from the gross profit, the figure of $122,287.26, you have a difference of $95,789, which does not mean that that is the profit on the sale of the appliances. This statement is not consistent. I cannot tell how much profit was made by the Brooklyn Union Company or by the subsidiary companies in the year 1923 on the sale of appliances. The head of the New Business Department knows what he sells his appliances for and he knows what they cost and the difference of the cost is the turnover. That is the gross profit. If you take gross profit that doesn't show whether you are making

any money or not, there are various debut and credit entries which effect. We do not take out his salary. We are required to do that in order to ascertain whether we are making any money.

There are not any records of this company that would disclose whether or not the Brooklyn Union Company made a net profit from the sale of its appliances in the year 1923. No analysis would show that.

To my knowledge, Mr. Wiske doesn't maintain any separate record so that he knows his gas appliance end of the business is being run at a loss or a profit. I never heard of it. It is not necessary for him to know it. He does not know it. * * *

[fol. 1579] That is the practice the company has followed. In preparing for this case, the company has not been put to the expense of employing any additional clerks, engineers, or employees; the company besides employing or retaining Bartlett-Hayward Company. Outside of the engineers, none of the employees has done any extra work in preparing for this case. I mean by that that they have done it at regular times. They have not been allowed anything for the extra services they have given. I have devoted considerable time in preparing for this case. I have not attempted to keep any record of the time devoted by me. I might say twenty-four hours a day—that is sometimes and some days ever since the case has started, since the actual trial started. My assistant has also given a great deal of his time to the preparation of this case. He has not given more time than I have. It is a fifty fifty break I guess on that work. He has not filed with me any records, showing the amount of time he has given to it. Mr. Atwood, Mr. Bush, Mr. Jourdan, Mr. White, Mr. Waldron, and Mr. Staniford have also given time to this case. I have not at any time attempted to estimate the amount of time which I or any of these other gentlemen have devoted to the trial of this case or the preparation of the trial. I have not attempted to value the amount of service they have given to it. Miller's compensation is included [fol. 1580] in the payments to the Bartlett-Hayward Company. And in the same way Mr. Burt's services are included in the payments to the Northeastern Construction

Company. Our salaries are all in the figure, not in the miscellaneous general expenses. They are all included in the regular general officers' salaries.

According to Exhibit 257 the total production expenses for 1922 was 50.98. I could not tell what the production expenses were in that year at each of the plants. That figure of 50.98 is of course an average cost of production at each of the plants. I am reading from that book that Mr. Deegan gave me.

The Witness: I am reading from the Brooklyn Union Gas Company's annual report to the Public Service Commission for the year ending December 31, 1922, an insert attached to page 55, showing the detail of gas, manufactured and storage expenses at each station:

Total net cost of Citizens Works	53 40	cents.
Fulton Works	49 86	"
Nassau Works	47 58	"
Williamsburgh Works	49 95	"
Equity Works	60 87	"
Metropolitan Works	47 35	"
Holder stations	1 23	"
Total	50 98	

That is the figure for the whole year 1922. For the [fol. 1581] year 1923, reading from the report of the Brooklyn Union Gas Company to the Public Service Commission for the year ending December 31st, 1923 insert attached to page 55:

Total Cost Citizens Works	53 01	cents.
Fulton Works	46 18	"
Nassau Works	47 18	"
Williamsburgh Works	47 09	"
Equity Works	58 43	"
Metropolitan Works	44 59	"
Holder stations	1 27	"
Total	49 03	

Those figures which I have read, I have read from the report to the Commission, and they are really made up from our books which are in evidence in this case. Those identical figures are not contained in my books. Not the figures I have just called off, they do not appear in the books. That is a computation. The basis for the figures is in the books. Mr. White's salary, Mr. Jourdan's, Mr. Waldron's, and Mr. Atwood's is allocated to fixed capital. Their entire compensation is not carried in our general officers expense and salaries regardless or not whether a part of their time is devoted to operating questions or to construction projects.

On Exhibit 259, under the heading Materials and Supplies, the sums represented there include sums for materials [fol. 1582] which are afterwards used for construction purposes. When they are used for construction, they are charged to fixed capital, but not until then. I could not give any idea of the amount of construction materials in the year 1922 which afterwards went into fixed capital. I have tried that many times but have never arrived at a figure. It would be an estimate at best. I don't recall what estimate I did make. I simply discarded it. I couldn't recall any figures which I worked on which lead me to believe the amount was so much as 50 per cent. I don't think I went as far as that even. I have not found out how much of the cash was received from the sale of the securities. There is also included in the cash set forth for exhibit 259, the payments made by the subsidiary companies. I ex-luded the balances owed by the subsidiary companies from that; but I included the payments actually made by the subsidiary companies. The payments made by the subsidiary companies in 1922 are set forth in the Public Service Commission report. The amount paid by the subsidiary companies during 1922 was $7,277,998.51, and during 1923, $3,526,-649.64. I do not think that represents all the cash, though the reimbursements are the credits in the open accounts during that year. I don't think that represents cash. I could not tell how much of it represents cash. I could not tell from these reports; it is not so separated. I could furnish [fol. 1583] that. That appears in my books that are in evidence.

We have some prepayment meters on the District. I think there — about 14,000 prepayment meters out. I am

not just sure of that figure, but it is around that. We do not allow any discount for the prompt payment of bills. There is no penalty for not paying bills quickly, except the danger of having your gas cut off. Our company does not rent any gas appliances nor sell any of its gas appliances on the partial payment plan.

PAYNE

Redirect:

All the places where appliances are exhibited, according to my previous testimony, are places where all the business necessary to the gas company, whether payment of bills or anything in connection with the gas company is carried on. In other words, none of those places are used exclusively for exhibition, demonstration or sale of gas appliances.

The expenses to the plaintiff per thousand cubic feet in 1922 and 1923 of gas used at works and holder stations in the manufacture of gas which was subsequently sold to the so-called subsidiaries are as follows: In 1922 it is .0003, in 1923 it is .0002. In 1922 for repairs to gas mains in territories of subsidiary companies—was $39,280.38. In 1923 it was $55,707.80. Plaintiff's Exhibit No. 166 for identifica-
[fol. 1584] tion, Schedule entitled "The Brooklyn Union Gas Company, Meters Owned June 1st, 1923," I have checked from the records in our office and can now state the figures in the columns "Size" and "Number of Meters" are correct according to our records and show the number of meters of each size owned by the company on that date. That includes all meters. I have prepared from my books a schedule, showing the highest and lowest prices paid each year, commencing with 1913 for a number of materials used by the company. That was prepared under my supervision from the records in our office. I offer it in evidence.

Mr. Cummings: I think I will object to it on the ground that it is incompetent, irrelevant and immaterial.

(Paper received in evidence and marked Plaintiff's Exhibit No. 282.)

The annual rental in 1922 of the tenements at York and Gold Streets was $1,512 a year and the same each year. In my schedule the item entitled "Other Rent Deductions" covers the amount in 1923 which was $29,117.80 and it

covers the various properties that we rent. It is practically the same item; that is, the same charge is made in 1922 and 1923. I haven't the 1922 list here, so it will be pretty hard for me to tell what we had in 1922, but I can give it for 1923.
[fol. 1585] Store and basement at 630 Myrtle Avenue;
Store at 2069 Fulton Street;
Store and basement at 348 Court Street;
Store and part of basement and rear building, 723 Fourth Avenue;
Land northeast corner Van Sinderen Avenue and Dumont Avenue;
Store and basement 1383-1389 Myrtle Avenue;
Garage, 264-276 Butler Street;
Land, Flatbush Avenue and Avenue H;
Land, Kent Avenue and South Ninth Street;
Premises, 632 Kent Avenue;
Garage, Third Avenue and Third Street;
Land, south side of Beaver Street and South Side of Church Street.

Referring to the report to the Public Service Commission for the year 1922, the premises rented in 1922 are:
Store and basement 630 Myrtle Avenue;
Store, 2069 Fulton Street;
Store and basement, 348 Court Street;
Store, part of basement and rear building, 723 Fourth Avenue;
Land, northeast corner Van Sinderen Avenue and Dumont Avenue;
Store and basement, 1385-1389 Myrtle Avenue;
Garage, 264-276 Butler Street;
[fol. 1586] Land, Flatbush Avenue and Avenue H.

PAYNE

Recross:

As to how I made that computation of the gas used at the works and the figures of .0003, in the first place, I took the quantity of gas used at the works and the holder stations and multiplied that by the works cost for the gas, and that gave me the value. Then I took the sendout of the system and found out what percentage the gas sold to the subsidiaries was to that sendout, which represented a certain perentage. For 1922 it was 20.75 per cent. For 1923

it was 22.32 per cent. Then I took that percentage from the value of the gas used at the works and holder stations and got the amount of gas used for the subsidiaries, and dividing that amount by the sales of the Brooklyn Union Gas Company gave me the cost per M to the Brooklyn Union. In 1922 it was $3,700.10; in 1923 it was $3,815.90. I have not included in there any of the gas used in the general office building at 176 Remsen Street. It is just the gas used at the works and holder stations.

[fol. 1587] Brooklyn, New York, April 23, 1924.

JOHN H. WALDRON

Direct:

My present position with the Brooklyn Union Gas Company is Assistant Superintendent of the Street Department. I entered the employ of the Brooklyn Union Gas Company as a clerk in the office of the Chief engineer in December, 1907, served there for about three and one-half years, and the duties there embraced the digesting of reports for the chief Engineer from all the works and stations and departments under his jurisdiction. In the summer of 1911 I went into the Street Department as stock clerk in the field. My duties there were checking up the materials used in the construction of mains and services and materials stored in the yards. Later was made a paving clerk in the field, and my duties were to check up the openings made for the various repairs and new construction in pavement and checking up the restoration of such pavement. About 1915 I was made assistant to superintendent, Mr. White, and since that time I have served with Mr. White as his assistant, my title being changed in 1916 to Assistant Superintendent, and the duties there embracing, as the title infers, assistant superintendent to anything which Mr. White has done or is involved in, doing it with him—the planning and supervising of maintenance and construction of the mains and services and meters. And such is my duty at the [fol. 1588] present time. I have had experience in plotting and reading maps and diagrams and making diagrams and so forth in the Street Department—that has been and is

my duty at the present time—planning of new construction, which embraces the plotting of it and the marking. I received directions from Mr. White to calculate the cost of laying in a single trench those mains of the plaintiff, which, on June 1st 1923, were laid parallel to each other on the same side of various streets in the Borough of Brooklyn, and proceeded to make that calculation. I considered only the mains in use. I took my data from the atlas in use in the Street Department which, in this case I believe, is Exhibit No. 169. By reference to the Exhibit No. 169 I have taken all blocks or streets where more than one main is shown on one side of a street and scaled the map to establish the distance that such mains may parallel each other. I took off the mains from from the map, and then scaled the map for distance. Then I established the parallel mains by combination. For instance, on one street there may be a 2, 6, a 10 and a 20 on one side of the street. That I called a combination and measured the distance that those four mains parallel each other. If the 20-inch ended at the end of one block and the 2, 6 and the 10 carried on, that would become another combination. I took that measurement for the distance which the three might parallel each other until such paralleling such stop and only one main continued. I made up the total linear feet of combinations, [fol. 1589] and then I calculated the minimum width trench in which each combination could be laid. The depth of the trench was determined by the largest sized main in any particular combination. Then I established the width necessary to lay those mains, allowing the smallest possible room a man could work in outside of the mains, and outside of the pipes. In other words, I took a trench in which these mains would be laid side by side and not superimposed over each other. Then I calculated the cubic yards of excavation per linear foot per each combination. The cubic yards of excavation per linear foot were applied against the linear feet of each combination, to establish the total cubic yards of excavation for each combination. Then in turn I summed up all of these total cubic yards of excavation combined and established the total cubic yardage necessary to excavate to lay all the parallel mains in one trench in whatever combination they may be in the streets, and (the total cubic yards of excavation to lay the

mains in one trench as per the combinations shown on the atlas were 423,365.6), then I applied next Mr. White's cost per cubic yard of excavation and back fill against my established figure of cubic yardage for combinations. I adopted Mr. White's figure of 2.8125 per cubic yard of excavation and backfill against my total, and multiplied 423,365.6 cubic yards by that amount, and that gave me the figure of $1,490,715.75. Then I considered or took the [fol. 1590] individual mains entering into the total combinations and established the linear feet of each and every individual main shown in the combinations and then applied the cubic yardage necessary to lay those mains as per Mr. White's calculation in separate trenches, and thereby I established the cubic yardage necessary for individual trenches, which was $475,545.4 and applying Mr. White's cost per cubic yard of excavation and backfill gave me a total there of $1,337,471.44. That shows that there was a difference of $146,755.69 less in the cost of construction if all the parallel mains were laid in one trench.

Cross-examination:

The minimum width is governed entirely by the outside diameter of the pipe in the trench. On all pipe, that is on all cast iron pipe from three inches to twenty inches, I have allowed eight inches outside of the outside wall of the pipe, which simply permits a man's leg to get in, in leveling the pipe, and from 20 inches up I have allowed nine inches because it becomes rather difficult for a man to straddle the pipe and he has to do rather what we call side straddle it to go through. So there you have the basis of the minimum width of trench. From three inches to twenty inches you allow eight inches on each side of the outside wall of the pipe, plus the outside diameter of the pipe, and you have established your minimum width of trench. For 4-inch I have allowed eight inches on each side of the wall of the pipe—eight inches on each side, that would be sixteen [fol. 1591] inches; it is eight inches on each side, plus the outside diameter of the pipe, and that is 4.8 inches. I have assumed a certain minimum space for a man to work on the outside wall of a pipe, the outside pipe of a combination. There is a variation. The smaller pipe has lesser thickness. The 4-inch pipe is .8 of an inch; the 6-inch pipe is .9, and so

on up. As a pipe gets larger in diameter, the wall of the pipe becomes thicker. Mr. Cummings asked me for the minimum sized trench, and I gave him the allowable space for a man's leg to get in between the outside wall and the outside diameter of the pipe. I allowed eight inches for his leg up to 20-inch pipe, and from 20-inches up, I allowed nine inches. Take the bell hole first. You would allow fifteen inches from the wall of the trench to the outside diameter of the bell, then you would allow the outside diameter of a 20-inch bell, which is 26.86, then for the space between a 20-inch and you say your next size is 6. I would allow between a 20 and a 6, six inches of space for a man to work, then the outside diameter of the bell of a 6-inch pipe which is 10.7 inches, then a working space of 6 inches from the bell of the 6-inch to the bell of the 4, then the outside diameter of the bell of the 4-inch pipe which is 8.4 inches, then calking space of 12 inches, allowable on the outside of the 4-inch pipe for a man to work. That would govern your width of bell hole for a 4, 6 and 20-inch combination, and your bell hole would be four feet deep. [fol. 1592] Then you would go into the run of the pipe. That would be 84.96 inches, which is the equivalent of 7.08 feet, the width of trench necessary for 4, 6 and 20-inch combination. That is for the bell hole. For the trench you would allow eight inches from the outside of your wall of your trench to the outside diameter of your 20-inch pipe, then the outside diameter of the 20-inch pipe which is 21.6, then the flare of the bell of a 20-inch pipe which is 2.63, then the allowable space for a man to work of 6 inches from bell to bell, but you have to govern your distance between your run of pipe by the distance you have allowed for working space on the bell. You allow six inches, then for the flare of the bell on a 6-inch pipe which is 1.9 inches plus the diameter of a six inch pipe, which is 6.9 inches, and the flare of the bell of a 6 inch pipe plus your 6 inches from the bell of the 6 to the bell of the 4 inch pipe, then your flare of the 4 inch pipe which is 1.8, plus your outside diameter of 4 inch pipe which is 4.8, and your 8 inches of working room. The total of those is 69.53 inches, or the equivalent of 5.75 feet for a distance of 8 feet in the length of pipe. 8 feet for the length of the run of pipe beyond the bell. I scaled the maps to obtain the total length of all mains which parallel one

another on the same side of the street. I can give the linear feet of combination, for each and every combination. We [fol. 1593] could establish street mileage, but I could not give that offhand. It is a matter of calculation. I have all the figures entering into it, but it means adding up the several sheets. I simply adopted Mr. White's cost figure of excavating and back-filling. The cost of excavating and backfilling would be the same, no matter what the width of the trench. That is, a man can dig a trench 20 inches wide at the same cost that he could with one with 84.84 inches wide, and he could back-fill it. And at the same expense, it would not be any less expense to back-fill a big trench than it would a small trench—it would all cost the same. I am directly in charge of all the gangs doing the work at the present time. I have been in charge of them ever since I have been Mr. White's assistant, which dates back to around 1913. I have had occasion to excavate a trench of 84.96 wide—7.08 feet wide, very recently, not for the Brooklyn Union Company, but one of the subsidiary companies. This was for a 20-inch main. Due to other sub-surface structures I was compelled to excavate this wide trench. It was hand excavation. For that trench, this is approximate, 700 feet. We used pick and shovel, to excavate, shovel and rammers to back-fill. To back-fill we just threw the dirt in and tamped it down with rammers. Supposing we had a trench 7 feet wide for a great stretch to back-fill and to tamp, we wouldn't back-fill that trench by taking an ordinary road [fol. 1594] scraper, and the reason I say no is because we recently tried it, and when you have a trench that wide you have already taken one-third of the roadway, which is always permissible for construction, but if you were to use apparatus to back-fill it, you obstruct the highway which is not permissible. You can't fill it with any scoop, because your drag line has to be across the street, thereby closing off traffic, and we have tried in some instances by putting a dead man on the outsile side of the trench to prevent it going over the street, but the result of that was to pull your trench in, so that the means of back-filling such as that for a corporation like ours is not practicable, we can not use it.

[fol. 1595] Brooklyn, New York, April 25th, 1924.

DONALD McDONALD

Direct:

I am the Secretary and the General Superintendent of the American Meter Company, manufacturers of gas meters, with its principal office at 105 West 40th Street, New York City. I began in this business on the 26th day of July, 1886, 38 years ago this year, in a factory which my family established in Albany in 1857 under the firm name of D. McDonald and Company, now a part of the American Meter Company. I served the usual apprenticeship of a young man in the business, grew up through all the manufacturing processes and for many years traveled in pursuit of the business throughout the United States, in the making and selling of gas meters, and other matters pertaining to the business and am now in charge in a general way of the selling program of our company in this vicinity, in this neighborhood of New York.

We have seven producing factories, one in Boston, one in Albany, one in New York, one in Erie, Pennsylvania; one at Baltimore, Maryland; one in San Francisco, and two in Philadelphia.

I am familiar with the current prices of gas meters of various sizes prevailing in New York on or about June [fol. 1596] 1st, 1923. Plaintiff's Exhibit No. 166 for identification states the prices of the various sizes shown in the column "Cost per meter" and correctly states those prevailing prices.

The Consolidated Gas Company of New York and its so-called affiliated companies, if I may use the word correctly—the Boston Consolidated Gas Company, the Peoples Gas & Coke Company of Chicago, the United Gas Improvement Company in Philadelphia, operating perhaps thirty gas undertakings throughout the United States; the Washington Gas Light Company; the Laclede Company of St. Louis; The Pacific Gas & Electric Company of San Francisco, operating the larger part of the gas undertakings in California outside of the southern part of the state and many other companies of like character. At the date you mentioned, June 1st, 1923 the American Meter Company

was selling meters to practically all of these companies that I have just named; if not all, I think about all, at the same prices as these that you have. It is our custom with slight variations due to differentials in freight to maintain the same price throughout the country at any given time.

Mr. J. A. Dykman: I offer in evidence, sir, Plaintiff's Exhibit No. 166 for Identification.

Mr. J. A. Dykman: Then the Master sustains the objection to this exhibit?

[fol. 1597] The Master: Yes.

Mr. J. A. Dykman: And to that the plaintiff excepts.

The current price prevailing in New York on June 1st, 1923 for three-light meters and others are as follows: 3-lights, $7.70; 5-lights special, $7.70; 5-lights, $8.40; 10-lights, $11.20; 20-lights, $21; 30-lights, $30.80; 45-lights, $47.60; 60-lights, $61.60; 80-lights, $87.50; 100-lights, $105.00; 150-lights, $161.00; 200-lights, $224.00; 250-lights, $280.00; 300-lights, $332.50; 500-lights, $840.00; 600-lights which should properly be 60 C; that is the trade name for that meter, is $385; 1700-lights, $1225.00. Those are all the regular sizes that I have enumerated. The prepayment meters are exactly the same price plus a prepayment attachment that is on them. The 3-light prepayment $11.45; 5-lights, $12.15; and ten-lights, $15.20. The prepayment price is figured from the regular meter price plus a prepayment device always; so that makes the complete price for the prepayment meter.

McDONALD

Cross:

The price of 3-light meters on December 31st, 1920 was $8; 5-lights $9.60. If you will please ask me the question the way you want me to answer, I will correct it. The prices for the regular meters as of December 31st, 1920—$10.20 for 5-light meters, 3-lights $8.50, 10-lights, $13.60; [fol. 1598] 20-lights, $22.50—(refers to papers)—the correct price is $25.50, as in this book. 30-lights, $37.40; 45-lights, $57.80; 60-lights, $74.80; 80-lights, $106.25; 100-lights, $127.50; 150-lights, $195.50; 200-lights, $272.00; 250-

lights, $340.00; 300-lights, $403.75. The Brooklyn Union Gas Company had no 500-lights such as are listed here, nor 600-lights, nor 1700-lights at that date. They have purchased them since. The prices of meters of various sizes as of December 31st, 1919 was: 3-lights, $8; 5-lights, $9.60; 10-lights, $12.80; 20-lights, $21.60; 30-lights, $32.00; 45-lights, $50.00; 60-lights, $64.00; 80-lights, $90.00; 100-lights, $100.00; 150-lights, $164; 200-lights, $220; 250-lights, $272; 300-lights, $300. The market price of meters which prevailed on January 1st, 1914 was: 3-light meters, $4.80; 5-light meters, $5.70; 10-light meters, $7.50; 20-light meters, $10.80; 30-light meters, $16.50; 45-light meters, $25.20; 60-light meters, $33.00; 80-light meters, $45.00; 100-lights, $52.50; 150-lights, $78.00; 200-lights, $105; 250-lights, $135; 300-lights, $165.00. The prices of meters since 1914 practically doubled from that time to December 31st, 1920. That is 5-light meters increased from $5.70 to $10.20 and $127.50 for 100-light meters on December 31st, 1920. And since December 31st, 1920, meters have receded in purchase price; since that time the purchase price has been lower, the value has been lower. Today they cost less than they [fol. 1599] did on December 31, 1920, and also December 31st, 1919. Meters above 100-light meters are only a slight demand. We have a few in stock at times. They are generally made to order. The bulk of our meters are now 5-light meters. The bulk of the meters that we were selling in 1886 was 3-lights. That continued until 5-light meters came to be more generally used than the 3-light meters. I should say that happened about 1900. And today the 3-light meters are not sold to any great extent. It is based on the list price with discounts.

A meter might last ten years and be serviceable to the company if it was not repaired. The Public Service Commission says it has to be out in seven years. The Brooklyn Union Company may not lawfully keep a meter in service over seven years without removing it for examination and test. The prices I stated here are the prices at which our company sells meters. In my opinion the life of a gas meter is about 33 years. My present opinion is that it is longer than 25 years, and my best opinion now is that it is about 33 years. There must always be a large element of conjecture in such an answer, so that one does not contradict one's self

by making a different statement from year to year. During the last two or three years, however, we have as a part of our business made a fairly careful survey and study of the whole situation, especially in certain sections of the country where it was more easily studied, certain com- [fol. 1600] panies, and I have become convinced of two things: First, that during recent years, the gas companies are taking better care of their meters than—well, I won't fix a period, but I will say previously. They are, perhaps, if I may be allowed to use the term, buying more intelligently, that is to say, meters more suited to the use for which they are putting them.

You asked me a few minutes ago about the time when 5-light meters came into more general use: The name of a meter, the light that it is called, indicates its capacity per hour, and the three light meters when we were using gas for illumination would take care of a consumer, but today the bulk of gas is sold for heating and domestic purposes and there is a greater load and the gas companies tend to buy a larger size, making the meter work easier and last longer, and I think that that is the reason why I would change my testimony from two years ago. Possibly also in my own mind I was influenced at that time by conditions prevailing in the use by the gas company itself of their meters. In the period following the war, or during the war, when the gas companies performed a highly patriotic service in furnishing the United States with toluol or the lubricants from their gas, it had some effect on their meters, not much, but some and it might have reflected in my mind as I was [fol. 1601] very familiar with that at that time, in saying that perhaps that it made for a shorter life to a meter, it required more repairs, in other words. Now, I think that condition is improving and that they will get a better use from their equipment. Well, more particularly the Atlantic Coast, that is, the cities on the Atlantic Coast are more available for such investigation, such as the Brooklyn Union, as an example. The Brooklyn Union Company, for instance, keeps very careful records of their meters and are good enough to us, to whom we sell them goods, to give us the result from time to time and allow us access to their figures so that we may draw certain deductions from them. In certain other cases, in some of the New England cities in the neighborhood of Boston, the relation is even a little

closer at times, we come into closer contact with them, and we get closer figures, which we carry over, and we see many of the meters that come in for repairs. I frequently—I won't say frequently, but I occasionally visit the repair shop and look at the meters as they come in off of the service, and see them and see what is done to them and how they look after they repair them and are ready to be put back into service, and in that way I come into very close contact, myself and I get a good deal of information from our own people, our own men, and other men in our employ, and [fol. 1602] in our factories who tell me these things. Every manufacturing concern that has goods that have a lasting quality are constantly studying their own product and their own conditions. As a result of that study I came to the conclusion, that the life of a gas meter, the useful life, was about 33 years. I think there is a general tendency on the part of gas companies as a whole to take better care of their gas meters today. The requirement of the Public Service Commission that meters be removed and tested every seven years was in effect two years ago the same as it is today.

McDONALD

Redirect:

I visited the repair shop of the Brooklyn Union Gas Company and saw their meters which had been brought in and repaired and were ready again to go into the district. My opinion of the condition of those meters which I saw repaired and ready again for use, based upon my experience their condition was first class. A gas meter might be generally divided into two parts: its casing and its mechanical parts. The casing naturally deteriorates with age, becomes dented, paint knocked off, it has to be repainted, the glass may be broken over the dial, various matters which do not prevent it from being correct measuring instrument. When these meters come into the Brooklyn Union Company or to [fol. 1603] any company, or to us for repairs, they are carefully inspected and such repairs as are necessary to put it back into as nearly as possible its original condition mechanically, and these meters which I saw which you speak of, which I have seen from time to time, were in first-class condition, registered correctly, measured correctly, as they would in the first place. They would not be good for

another 33 years because a general deterioration would take place.

McDONALD

Recross:

In stating the life of a meter as being thirty-three years, I meant a meter which was being kept in good repair. If not kept in good repair, its life would be shorter, I should say.

On each side of the meter, on the left hand side and the right hand side, there is what is commonly called the connecting pipe through which the gas comes into the meter and goes out again, and on top of the meter there is a screw cap and the swivel, forming the union by means of which the connection is made to the meter. It is generally made of brass, but frequently made of malleable iron or galvanized iron. They make both kinds. If I might qualify that, I don't know of any other meter company that makes caps and swivels besides ourselves. On the occasion or occasions which I visited the Brooklyn Union Gas Company shops, I found meters which had been discarded, scrapped. [fol. 1604] A meter repaired as I saw the Brooklyn Union Gas Company's meters repaired was equivalent to a new meter. I think if it has been in use for a period and brought in and repaired, that something of its life has gone, but I do mean that it can be put back into first class condition, presented to the Public Service Commission for inspection and sealed as it must be, and that it will pass such inspection and thereafter measure gas correctly for a period. Gas meters are called upon to endure something besides ordinary wear. Friction will wear the moving parts. They are called to measure gas vapor which condenses, and the time in which that meter will prove to be incorrect is an indefinite time; it is impossible to fix it. We find, or the gas companies have found, and we find, and the Public Service Commission has found that a reasonable period of seven years can be established so that no injustice is done to the consumer or to the gas company.

The Master: Yes, but that does not answer the question, quite. Now, taking all of those facts into consideration and calling into requisition your experience during these many years, what in your opinion is the period of time that

should be deducted from the life of a normal meter in order that we may know what the probable life is of a meter that *we may know what the probable life is of a meter that* has been repaired in the manner that you have described, as seen in the shops of the Brooklyn Union Gas Company?

Mr. Cummings: Well, if the Court please, Mr. McDonald has testified that the life of a meter kept in a good condi-[fol. 1605] tion or state of repair is thirty-three years, in his opinion. Now, if that meter that has been brought into the shop has been used for ten years and then repaired, at the end of ten years, it must necessarily have about twenty-three years of useful life beyond the period of repair.

The Witness: I do not see any reason why, if at the end of a period of seven years, other than our ten years, a meter were put back into first class condition again—and it can be done—why it should not renew its period of life indefinitely.

The Master: Well, haven't you testified that when a meter has been thus repaired, its expectancy of life has been somewhat shortened from the thirty-three year period that you have adopted with reference to a brand new meter? Haven't you so testified? If not, I have misunderstood you.

The Witness: Yes sir, but I don't think——

The Master: Now, what I am asking you is to have you give your opinion as to the length of life that has been cut off of that meter by that repair.

The Witness: I cannot give you any definite answer to that.

By Mr. Cummings:

Q. The more often a meter is repaired, the less remaining life it has.

A. Not necessarily.

Mr. J. A. Dykman: And I suppose the sooner it is kicked [fol. 1606] by a horse in a stable, too, the soo*n*er it dies, Mr. Cummings.

The Witness: Well, not necessarily.

The Master: Have you no experience that would enable you to express an opinion concerning the period of usefulness or life of a meter that remains, the reasonable ex-

pectancy, after it has been repaired in the manner you have described.

After seven years?

The Witness: There are about eight million gas meters in use in measuring gas in the United States today, according to the best records that we have. While I say that it seems to me, looked at over the years and judging from all of our customers with whom we have been in the closest contact with, that perhaps in one hundred years on a given premises, under given conditions, they would be obliged to replace the meter twice, which would mean three meters in one hundred years, that would fix the life at thirty-three years. They stay in service longer, apparently.

Q. Some do and some don't. Some are withdrawn prior to thirty years?

A. Yes, but on the average, now, as the matter stands——

Q. They will last on the average about thirty-three years, even if kept in a good state of repairs?

A. If kept in a good state of repairs.

Q. If kept in a good state of repair?

A. Not "even," but "if."

[fol. 1607] The Master: What was your allusion to one hundred years? I did not quite understand that.

The Witness: I was only trying to fix something——

The Master: What was your statement with reference to the period of one hundred years?

Mr. Cummings: He said they were replaced twice.

The Master: I would rather have the witness state it, Mr. Cummings.

The Witness: It is a question that is often asked in connection with our business, not under these circumstances, but under more informal conditions, and I have endeavored, myself, to get some idea on that.

A meter is a metallic measuring device, with the exception of a leather diaphragm, and if it were measuring absolutely clean gas, which it is almost impossible to produce in a manufacturing *h*as plant, and if it were used under what might be called perfect conditions, its life is indefinitem it is difficult to fix a life. As I say, looked at over a long period of years, take a period of fifty years, if you like from 1860 to 1910 or from 1870 to 1920, there

does not appear to be a replacement of the meters in use that would indicate that the life of a meter was only thirty-three years. It seems to me longer, and yet if we assume a general practice which has been found to be a good practice by the companies, that a meter will normally stay in use for seven years with justice to the consumer and to the company and then be taken out and tested and perhaps some [fol. 1608] minor repairs made and then put into use again for another period of seven years, with the understanding perhaps that at the end of that time it would be taken out and thoroughly overhauled, no matter whether it appears to need it or not—if you go on and do that five or six times, it seems as though by that time the meter would be antiquated to some extent; conditions might have changed, a meter would have been worn so that it would be more profitable to buy a new one than to repair it, the repairs would cost more than a new meter would cost. The oldest meter that I have seen in length of service was forty-seven years.

[fol. 1609] WILLIAM M. GREEVE

Direct:

Since my last appearance on the stand in this case, I have examined and considered *and considered* the character of the premises at 1016 Fulton Street, 1024 Fulton Street, 191 St. James Place, 197 St. James Place, 130 Atlantic Avenue, the so-called Metropolitan Branch at Fifth Avenue and Eighth Street, the Williamsburgh Branch at Bedford Avenue and South Third Street, the premises at 180 Remsen Street and the premises at 176 Remsen Street and formed an opinion as to whether the character of these several premises is such as to limit the usefulness of each as to the business of the plaintiff. They are all limited to the use of the plaintiff, with the exception of the office building on Remsen Street. By that, I mean 176 Remsen Street, the large general office building. I do not include in that the brownstone building next to it, known as 180 Remsen Street. My opinion of the market value of the premises at 176 Remsen Street on or about June 1st, 1923 was $800,000.

[fol. 1610] JOHN H. WALDRON

Cross:

The number of linear feet in which I found parallel mains existing—or the street mileage in which parallel mains exists: 546,873.7 feet, that is 103.57 miles. To the extent of 103.57 miles I found on streets more than one main parallel. It would cost $146,755.69 less by combination construction than in Mr. White's estimate of a similar trench. Mr. White's five per cent of incidentals is included in this figure which I have adopted of his. Incidentals are materials, and the price of those is arrived at by an estimate of five per cent on the cost of other materials. It does not enter into the labor cost. I did not make any computations to ascertain the extent of the trenches which Mr. White assumed would be necessary to excavate and backfill where the pipes were placed on hangers over bridges. Nor did I make any computation to ascertain the extent to which excavating and backfilling would be unnecessary where the pipes passed over tops of subways. The average width roadway is thirty feet. You might say on an average it was but one distribution main. In my calculations here I have considered all the so-called parallel mains being in one trench, laid side by side. There are none for any extensive runs. Where a main might be coming out of the stations, where the streets are practically honeycombed [fol. 1611] with mains, it has been necessary to put one main over another; but there you will find that the lower main may be at a depth of perhaps nine feet of cover to allow the upper main to have sufficient covering to give a roadway bed over it; but the number of mains above each other is quite limited. I know of no other instances where one main is above another parallel. The diameter of the pipe plus three feet of cover must be the depth of a trench for a main, 3 feet six inches plus the thickness of the wall of the pipe, 6.9 is right. All the depths of trenches will be governed by the diameter at the outside of the pipe plus three feet of cover.

In subway construction the way contractors want to place the blocking between the roof of the subway and the bottom or our main, rest the main on that blocking and then backfill, with the result that as soon as the trains start rolling

through that subway we have numerous leaks. Therefore we require backfill and settlement before we lay our mains to have a cushion under our mains to overcome the vibration of the rolling trains. In such case our work of laying the mains is done before the work of laying the pavement takes place.

[fol. 1612] ALTEN S. MILLER

Direct:

I went through private schools in Richmond, Virginia, one year at the Richmond College, and then went through Stevens Institute of Technology at Hoboken, where I graduated with the degree of Mechanical Engineer. I am a Fellow of the American Institute of Technical, I mean Electrical Engineers, a member of the American Society of Mechanical Engineers, the American Institute of Consulting Engineers, the Illuminating Engineering Society, the American Gas Association, the Natural Gas Association, the Society of Gas Lighting, and the American Association for the Advancement of Science. I was Lieut. Colonel in the Army Ordnance, and was stationed in Washington, having charge of the engineering division of the Ordnance, of the section devoted to the design of cannon ammunition. I am Vice-President and Director of the Bartless-Hayward Company of Baltimore. I am also the President of the Hyattsville Gas & Electric Company, and I am an engineer and contractor and manufacturer. Immediately after leaving college, I went with the United Gas Improvement Company of Philadelphia as Cadet Engineer, being in the general office. The United Gas Improvement Company was both a contracting Company for the building of [fol. 1613] gas plants and gas plant apparatus. A few months later, which was about August, 1888, I was sent to Omaha as assistant to the Superintendent of the gas company. That Omaha gas company was owned and operated by the United Gas Improvement Company. I stayed in Omaha four years, having charge, subject always to superintendent of the operation of the plant making gas, and also of the laying of mains and services and, in addition had charge, always subject to the superintendent, of the exten-

sions, in that case consisting of the building of a small gas holder and putting in a valve house. In 1892 I went to Chicago as manager of the National Gas Light & Fuel Company which, to all intents and purposes, was the western selling company of the United Gas Improvement Company; and after being there a few months, I closed up the subcompany and acted as western selling agent of the United Gas Improvement Company. There I travelled, examined gas plants, made estimates on additions and modifications, and also took some contracts for the installation of water gas apparatus. In one particular case, I not only took the contract but I arranged and worked out all the details for the addition and sub-contracted this addition and had it completed under my own supervision. In 1894 I severed my connection with the United Gas Improvement Company [fol. 1614] and came to Long Island City as engineer of the East River Gas Company in Long Island City. At that time the company was making and delivering a small amount of gas in Long Island City, was building a plant having a nominal capacity of 6,000,000 cubic feet a day, and was putting a tunnel under the East River for the purpose of distributing gas on Manhattan Island as well as making small extensions in Long Island City and laying mains on Manhattan Island. I completed the plant and acted as engineer—rather I took over all the enginering duties of the company and also the commercial duties as far as Long Island City was concerned, and I handled the entire commercial business end of the Long Island City distribution department. After the tunnel was completed and the gas distributed in New York City, I had entire charge of the manufacture of gas. Some time later, I think it was in 1896, 1897 or 1898, the East River Company was consolidated with the Equitable Gas Light Company of New York, and the Equitable plant was shut down after I had added to the Ravenswood plant, bringing the capacity of to 13,000,000 cubic feet a day. I was then made the engineer of the New Amsterdam Gas Company, which was the name of the Consolidated Company, and had the same duties that I had in the East River Company; that is, I had all of the commercial business in Long Island City, entire charge of the [fol. 1615] manufacture of gas and entire charge of the distribution of gas, including the laying and maintenance of

mains and services and the setting and maintenance of meters. I was not directly connected with the commercial end in New York City, although frequently consulted in connection with it.

In 1900, late 1900 or early 1901, I forget the exact date, the Consolidated Gas Company of New York bought the controlling interest in the New Amsterdam Gas Company and, in addition to my position as Engineer of the New Amsterdam Company, I became the constructing engineer of the Consolidated Gas Company. In that position, I made additions and modifications to several of the New York City gas plants, and also I increased the capacity of the New Amsterdam Plant at Ravenswood, bringing it up to a capacity of something like twenty-five million cubic feet per day.

About the same time; that is somewhere around 1900, I don't remember the exact date, I was appointed Consulting Engineer of the Brooklyn Union Gas Company in connection with certain changes and extensions that had been planned or were planning, and somewhere about the same date and for about a year I was the consulting engineer of the Lincoln, Nebraska Gas & Electric Compay.

In 1902 I left New York and went to Baltimore as vice-[fol. 1616] president and manager of the Consolidated Gas Company of Baltimore. There I was what my title indicated; I had entire charge of the operations of the corporation. I built a new plant there, modified the distribution system, besides performing the duties of increasing business. That was the period when active work was being done to build up or to extend the use of gas for other purposes than lighting as the companies were then losing the lighting business rather rapidly and the whole character of the business was changing, and I brought that company through that change, largely extending its fuel business.

About 1905, I think it was, the electric company was bought by interests interested in the gas property, and the two were consolidated. The Consolidated Gas Company of Baltimore and the Consolidated Gas, Electric Company, and I was made the vice-president and manager of the consolidated company. I built a new power plant, changed or abandoned three smaller power plants, modified the whole

distribution system, and generally reorganized the plant and person-el.

In 1909 I left Baltimore and went to St. Louis as vice-president and manager of the Union Electric Light & Power Company, a company supplying most of the electric current in St. Louis. A short time afterwards I was made president of the company. I continued in that position [fol. 1617] for two years, and then came to New York in the opening of a consulting engineering office with Dr. A. C. Humphries, as Humphries & Miller, which company was incorporated, and is still in existence, though not active. For four years I was active in the work of consulting engineer, including work in appraisals, management and advice as to extensions.

In 1915 I went to Baltimore as vice-president of the Bartlett-Hayward Company which is an engineering and contracting company. At that time they were going into the manufacture of ammunition. I built a plant for the manufacture of ammunition and equipped it, in co-operation with my two other associates, both engineers, and we manufactured ammunition for the Russian Government and the United States Government.

In April, 1918, I severed my connection with the Bartlett-Hayward Company, although not my financial interest in the company; went to Washington in the Ordnance Department in the position I have testified to. In December, 1918, I was discharged from the army and resumed my connection with the Bartlett Hayward Company as vice-president and director, which positions I still hold.

That gives generally the work that I have done in connection with the gas business, except that the Bartlett-Hayward Company's activities are essentially close to the gas business.

[fol. 1618] The Bartlett Hayward Company has plate shops, blacksmith shops, machine shops, and a large foundry. It manufactures or fabricates in its own shop, all of the large parts of a gas plant, that is, the tanks, hoppers used in connection with oil and coal, the purifiers, scrubbers, condensers, gas making machinery, and it handles—gas generating machinery. While it has no clay shop, it makes all the iron work in connection with retort benches and takes contracts for the installation of coal gas making

apparatus and makes gas holders and makes the castings and the steel work for gas connections, and also acts as a general contractor and builds complete gas plants. It does a good deal of other work of a different nature, but that is its connection with gas work. This company has installed 80 per cent of the storage capacity of the Brooklyn Union Company and its subsidiaries. It has built gas generating apparatus and purifiers, condensers, I think for every plant in the system except Equity; I think it has built all of the water gas generating apparatus, tar holding apparatus, and built all the shavings scrubbers in Brooklyn. I stated 80 per cent of the storage capacity. I doubt whether it has built half of the number of holders, but it has built all of the large holders.

I have appraised in recent years the property of all the gas companies operating in New York City and West- [fol. 1619] chester County; so that I have been familiar for many years with the plants and distribution system of the Brooklyn Union Gas Company, that familiarity being acquired in the course of the work that I have described.

Gen Jourdan, who was president of the Brooklyn Union Gas Company, was the manager of the New Amsterdam Gas Company when I was associated with it, and many problems of the two companies were worked out in conferences and discussions. There were many common problems which made us familiar with each other's plants and properties. Besides I was consulting engineer for the Brooklyn Union at one time.

The Bartlett-Hayward Company has done similiar work during the same period for other companies operating in New York City and Westchester. Possibly not to the same extent in connection with some classes of apparatus, but it has done similiar work, and in some classes of apparatus, holder capacity, for instance, to about the same extent.

In every case when new work is coming up, the general plans for any extensions are brought to me and we consult on the general plans. When the general plans have been agreed upon, the estimates are made on the basis of those plans and the estimates are gone over by me and checked up, and the final estimate having been agreed upon, I go [fol. 1620] into the terms of the contracts, and the work

being under way, or being started, I keep generally in touch with it, not very closely, but when it is completed the cost- are made up and they are compared with the estimate, the comparison is brought to me and I study it with my associates, the differences, if any, wherever they may be, and the reasons therefor between the original estimate and the final costs. In other words I pass on the general design at the start. And when I speak of estimates, I mean the Bartlett-Hayward estimates, before my bid is made. They pass under my supervision before the bid is made. After the work is completed, I check those estimates with the actual costs. I have kept in touch with the labor market. I have since 1894 kept myself informed and know the price of materials and rates of pay for labor entering into the construction of plants for the manufacture and system for the distribution of illumination gas, and the repair, renewal and replacement of such plants and systems in the city of New Work. I have also kept myself informed upon and know the quantities of material and labor reasonably necessary for these purposes. This has been a part of my work in the various positions which I have held.

I have prepared an inventory and appraisal of the plaintiff's property as it existed on June 1st, 1923, excluding land, buildings, mains, services, and meters. In connection [fol. 1621] with this preparation, I visited the property and examined the items of the inventory. I had a corps of engineers, including several engineers who have worked with me in the preparation of similiar inventories previously. I had my own estimating and engineering department at my own plant in Baltimore. These men worked under my personal supervision. I first went to the plants and laid out the work with my associates. Then after the inventory was made, I went to the plant and checked up the inventory to be sure that the quantities and descriptions were correct. And I satisfied myself that they were. I determined the unit costs which I applied to these quantities. I formed an opinion of the material and labor costs necessary to reproduce as of June 1st, 1923, the property shown in my inventory. The sum of the units established by me and which appear in this inventory represent my opinion.

The land, I took from the testimony of Mr. William M. Greve and Mr. W. R. Burling, the mains and services from Mr. J. T. White; the gas meters, I took from Exhibit 166. The equipment—you did not ask that question, but the equipment, I took from the book accounts. It is no estimate directly. I compared it with similar uses of other companies, but I did not make a detailed inventory for the reason that it runs into so many small items that it just [fol. 1622] isn't worth while. Plaintiff's Exhibit No. 283 for Identification is my inventory and appraisal. I have formed an opinion based upon my experience of the necessary amount of stores, supplies and working capital required by the plaintiff as of June 1st, 1923. I have in this Exhibit No. 283 for Identification set forth in writing my definition of working capital, its elements, and the amount in my opinion required by the plaintiff as of June 1st, 1923. If interrogated at length upon this subject by specific questions my answers will be the matter and figures set forth in the inventory under the heading "Working Capital." I so testify that in my opinion, the value of a meter in use measuring gas accurately compared with that of a new meter is more valuable. The value of a meter which has been brought in, repaired, tested and passed by the Public Service Commission, and is ready to go out on the district again, compared with that of a new meter, it is equally valuable. The cost to reproduce the plant and property on the labor, material and sub-contract basis, up to the point of beginning business does not represent in my opinion the entire cost of the property. The additional elements of cost are the elements described and listed on page 4 under the general heading—"Undistributed Structural Costs," sometimes called overhead. In other words, in this exhibit I have set forth in writing under the title "Un- [fol. 1623] distributed Structural Costs" my opinion of these additional elements as of June 1st, 1923 with respect to the plaintiff. And if interrogated at length upon this subject by specific questions my answer would be the matter and figures set forth in the exhibit under the title "Undistributed Structural Costs." And I now so testify. There is in my opinion an element in an assembled and established plant and system doing business and earning

money over the same plant and system not yet operative. I have in this exhibit 283 for identification set forth in writing under the title "Going Concern Value," my opinion as of this value as of June 1st, 1923. And if interrogated at length upon this subject, my answer to specific questions would be the matter and figures set forth in the exhibit under the title "Going Concern Value." I have formed an opinion as to the element which I have testified exists, the element of value in the plant and system of the plaintiff as an assembled and established plant doing business over the same plant and system not yet operating and the amount in my estimation representing that element of value.

Objection by defendants to witness testifying on going value on the ground that he was not qualified to give an opinion. Objection overruled. Exception.

The most comprehensive experience I have had in the development of a gas company from its inception was with the Hyattsville Gas & Electric Company, which I organized, built and developed, and as president of that company which has been operating about eighteen years. Next to [fol. 1624] that was the East River Gas Company, which was doing business on a very small scale in Long Island City, and which, after the tunnel was completed, was developed into a very large company in New York City. That was in 1894—my connection with it was from 1894 to 1902.

When I went to Baltimore in 1902, it was a small company, doing largely a lighting business. I developed that company till the output very greatly increased and changed the whole nature of the company's business. Then I was called in to advise in regard to the development of the business at San Juan, Porto Rico. There was a new company which was getting ready to operate and my advice was asked as to this very problem, whether the company should, through large expenditures develop its business rapidly, or with less immediate expenditure but with greater ultimate expenditure be permitted to grow. That was in 1912—I think—1911 or 1912—and in preparing myself particularly on that point, as they were problems of population, of characteristics of the people, I studied the development at

Tampa. The population was not exactly the same. The climatic condition was somewhat similar and that had been an intensive development of the business, and I made very careful study of that and advised and watched and was consulted in connection with the development at San Juan. I think those were the principal ones. I am familiar with the operations of the subsidiary companies of the plaintiff [fol. 1625] and their requirements. The value of that portion of the property included in my inventory, included in my opinion, devoted to the manufacture, storage, and delivery of gas for the subsidiary companies is $9,165,902. Subsequent to my coming to the East River Gas Company in 1894 and prior to November 1895, I visited the plants of the companies which were a-quired by the plaintiff on or about that date. I was familiar with and know the costs of construction of gas plants and distribution systems in New York. Assuming that on January 1, 1896, the plaintiff owned plants for the manufacturing of illuminating gas having a total manufacturing capacity of 26,800,000 cubic feet; holders having a capacity of 13,534,000 cubic feet; mains as follows: one and one-half inch 3,867 feet; two inch 8,456 feet; three inch 383,039 feet; four inch 1,632,-391 feet; six inch 992,593 feet; eight inch 308,608 feet; ten inch 126,341 feet; twelve inch 274,515 feet; sixteen inch 75,355 feet; twenty inch 93,683 feet; twenty-four inch 4,928 feet; thirty inch 474 feet; 88,024 services; 138,443 meters set and 5,280 meters in stock which had been acquired in the preceding November. I have formed an experience based upon the experience and knowledge to which I have testified—knowledge of the cost of labor and material then prevailing—of the cost to reproduce in Brooklyn on January 1, 1896 plants, general structures and a distribution system of equal capacity taking land at $5,349,400."

[fol. 1626] The Brooklyn Union Gas Company

Brooklyn, N. Y., May 5th, 1924.

ALTEN S. MILLER

Direct:

During my visits to the plaintiff's plants and stations in 1922 and 1923 I examined into their condition, maintenance and operation. The property was in good condition, well maintained, and operated efficiently. As a result of this examination I formed an opinion of the expenditure necessary on June 1, 1923, to put the apparatus in condition as if new. I have prepared a schedule setting forth such expenditures. It has been marked Plaintiff's Exhibit No. 284 for identification.

I have examined into and familiarized myself with the operation and maintenance of plaintiff's plants and distribution system, with reference to the costs of such operations and maintenance. I have likewise examined into the corresponding departments of each of the other companies manufacturing and distributing carburetted water gas in the City of New York and into the respective other departments of plaintiff and such other companies. In the course of such examination I have learned and know the cost of operation and maintenance in the several departments of these companies, including the plaintiff.

I have formed an opinion of the fair and reasonable cost of operation and maintenance in the several departments of plaintiff's business during the years 1922 and 1923, based upon my experience and the examination to which I have testified.

In my opinion, the operating expenses shown on Plaintiff's exhibits 257 and 258 for the years 1922 and 1923, re-
[fol. 1627] spectively, are fair and reasonable. I am familiar with the so-called new business department of the plaintiff. In my opinion such a department and its activities are a proper function for the plaintiff to perform as part of its general business. Such departments are maintained and operated by other companies in and around the City of New York.

In the first place, it permits the company to control and get into the service of its own customers a higher grade of

appliance, because they naturally do a greater business than the small hardware dealer and the department stores. They look at the quality of the material they are selling, and work for the benefit of the customers. Again, the whole business has been built up through these departments. At the time that I went into the gas business, all gas was used for lighting and there was almost none used for any other purpose. The gas business for lighting has completely disappeared, or almost disappeared; not completely disappeared but almost disappeared, and what little is left is going fast. The business of today has been completely developed by the new business departments of the gas companies. That is the cooking, the water-heating, other heating and the industrial business, so that this department not only gains meters, but it intensifies the gas consumption per meter and lowers the cost of gas, because the increased sales per meter reduce the cost of the gas, and the increased [fol. 1628] sales per mile of main and the New Business Department increased the sales per mile of main, *and the New Business Department increased the sales per mile of main,* increases the sales per meter and therefore reduces the cost of the gas.

It is important a gas company should know what type of appliances are used by its consumers. It is very important. Or of course you want to give good service and you must give good service. Now there are certain appliances made and sold which do not give good service and the householder blames that on the gas company. It never occurs to him that the gas appliance is not equipped for the conditions under which he is operating, having bought that appliance from a small hardware store or a department store, and it is not equipped for his conditions and he does not get good service and so he blames the company. I don't think the gas company inspects the appliance when they connect it up. I think many of these appliances are connected by the plumbers and the company doesn't know anything about [fol. 1629] them. The Company would turn on the gas whether an appliance was commercially unsuitable or not.

It might or might not be dangerous. If they thought it was dangerous, they would say so, but assuming that they have such a case; if it is not going to give good service and they say so, then the customer would probably say "It is none of your business. I know what will give me good serv-

ice and what will not." It is my opinion that the gas company has an interest in the nature and type of these appliances used by the consumer. So much so that when I ran a company, I charged such a low price for appliances that I would not allow anybody else to sell them in town. That is, nobody could sell them in competition, and I controlled every appliance that went into Baltimore for nearly ten years. That is the only way I could do it.

I ran my new business department at a loss. That is, a loss for the department alone, but I ran it at a tremendous gain to the company as a whole. That is about the best money that I spent while in Baltimore, taking the company as a whole; but the department ran at a loss of about $10 for every appliance that we set. Having once turned on the gas in a house the gas company has no means of becoming aware of what additional appliances are installed by a consumer unless the draft on the service or the meter is so great that they are called upon to put in extra facilities. Of course if the complaint is made that there is not enough gas, as might easily be if you put in one of the water heaters of the Pittsburgh type that will use 100 or 150 feet an hour, the service might be too small, and the complaint would be made [fol. 1630] that the service is improper. Then when the representatives of the company would investigate, they would find that appliances have been added, increasing the demand beyond the capacity of the existing facilities to furnish it. In that case they would know it.

Mr. J. A. Dykman: I offer in evidence, sir, Plaintiff's Exhibits 283 for identification and 284 for identification. I should have offered Exhibit No. 166, sir, before I offered these, and I offer it now in connection with them.

Objection by defendants.

(Plaintiff's Exhibit No. 166 for Identification was thereupon received in evidence.)

Exception to defendants.

Mr. J. A. Dykman: Now then, to straighten the record, I renew my offer of Plaintiff's Exhibits Nos. 283 and 284 for Identification.

Objection by defendants on the ground that exhibits incompetent and witness not qualified to give opinion on

working capital because he lacked experience in financing gas companies.

My first connection was with the East River Company. At the time that it was necessary to increase that company, I made estimates of construction and discussed with the financial interests, that is, persons who were going to raise the money, the question of raising the money and the cost thereof. Subsequently that was in 1897, I think; at the time of the consolidation of the Equitable. Then subsequently—no, that was before the consolidation of the Equi-
[fol. 1631] table; the financing after the consolidation of the New Amsterdam, and this was sometime before the consolidation of the Equitable; The East River Company, in Long Island City.

Mr. Cummings: Was that the time you had the financial experience?

The Witness: Well, I went to Baltimore, in 1902, and I found it necessary to raise a very substantial sum of money to make extensions to the Baltimore properties, and I arranged that with the bankers. Subsequently in Baltimore since I left the Company I have been consulted in connection with their extensions and the raising of their money, and am familiar with the costs of such financing. In my own little company I have found it necessary, and am now in the midst of negotiations for financing, and I have also studied the question as to the costs of very many companies and familiarized myself with financial conditions.

Objection as to qualifications of witness overruled.
Exception to defendants.

I have formed an opinion as to the value of the franchises of the vendor companies in 1895.

Objection by defendants on the ground of immateriality and incompetency.
Overruled. Exception.

My opinion concerning the value of the franchise rights acquired by this corporation, the Brooklyn Union Gas Company, in 1895, November of 1895, in taking over the prop-
[fol. 1632] erties, tangible and intangible, of the vendor companies in six million dollars. The value of those in-

tangible rights on June 1st, 1923 was at least six million dollars.

Same objection.
Overruled.
Exception.

The reason for putting on this sheet of paper a valuation, in Plaintiff's Exhibit No. 283, page 2, of $3,050,000, that being below my estimate of the value and the value put on by the company, in its own books, I took the company's valuation.

(Plaintiff's Exhibit No. 283 for Identification is now received in evidence.)

(Plaintiff's Exhibit No. 284 for Identification is now received in evidence.)

[fol. 1633] The portion of the property shown I think in our exhibit which was used by the subsidiary companies was valued at, $9,165,902. The works and the general property of the company, the transmission mains and the laboratory equipment are apportioned in accordance with the gas sales. I used 77.58 per cent Brooklyn Union, 22.42 to the subsidiaries. I applied them to the works, including the works buildings, to the general buildings and to the transmission mains and the laboratory equipment. Here are the figures, and it is rather a complicated computation. * * *

[fol. 1634] Going Concern value, it is the cost of first organizing the property and bringing it into efficient operation, plus the cost of organizing the personnel, getting the staff and organization into efficient operation; the next is the cost of advertising, canvassing, special concessions of various kinds necessary to secure the business and to teach the customers how to use the gas economically and to use it as fully as possible in the shortest time, including advertising, canvassing, the expense of the organization that is working to build up the business. That is organizing it as an operating company efficiently. The difference between the cost of operations in starting, inefficiently, and to produce and make it efficient, would be part of a going concern, because no non-operating company can organize a going concern and become efficient without considerable ex-

penditure over and above what it would be if it had been previously organized and was operating and would operate during that same period, and efficient operation. The organization which is included in going concern value differs from the organization and development prior to construction that is shown on my exhibit. One of them is the organization and development prior to construction, and the other is the organization of your operating force after you start operating.

[fol. 1635] You organize and develop the project, and then you build up your operating organization and develop the business. They are two different things, just as separate as the bricks and the hooks.

Organization and development—one of them is the preliminary study of the project, which has no relation whatever to operation. It covers just what is set forth there, which is a force studying the situation with preliminary engineering studies and estimates and preliminary studies of the territory and character of the territory, the legal advice as to franchises, requirements and the preparation of a preliminary prospective and all the data necessary to interest the underwriters in a new project. The organization subsequent to the completion plan involves the building up of an operating force to make gas, to distribute the gas, to sell the gas, keep the account, and to make it an operating concern, instead of brick and mortar and cost iron pipe.

The method used for valuing the going concern value, reached a valuation of $16,055,200, that is $35 per active meter, number of active consumers; every meter that is installed and is active, results in an expenditure of about $35. The basis of that, just what it would cost to organize this property, get its business, if reproduced new at this time, and if the business were built up intensively and not allowed to just roll along slowly. It involves the organization of the plant, making it efficient, the organization of the personnel and making it efficient, the cost of canvassing, advertising, such concessions as it would be necessary to make [fol. 1636] in order to build up the business rapidly, and also the carrying charges on the project during a short period.

Well, if we built it at $35 a meter, we could not carry it over two years, and that only in part. You would start at

zero, say, and at the end of two years be earning full. Of course it could not be done in that period, but that is the only way it could be kept down to that low figure. If they started a gas plant here in Brooklyn now it would not be on a paying basis in two years.

[fol. 1637] May 12, 1924.

Brooklyn Union Gas Company

ALTEN S. MILLER

Cross:

I have done quite a little construction work for the various gas companies in the Metropolitan District in the last five or six years. * * *

[fol. 1638] The price given for gas meters in accordance with Exhibit No. 166 is $4,500,162. That exhibit shows the cost new of the meters, substantially new, which the plaintiff owned on June 1, 1923. They are continually brought in and overhauled. It is a question of what you mean by "new." They were not bought on June 1st. You could call them old, even if they were bought on May 30th. They would be a day old. I don't know the age of them, anyway. A meter which is registering gas properly is worth more than a new meter. I did not assume that the new meter was on the district. I assumed that the new meter was in the shop and the old meter was out on the district, properly registering gas. Under those conditions an old meter, properly registering gas, out on the district, is [fol. 1639] worth more than a new meter, regardless of the age of the old meter, if it is properly maintained, as these meters are. It would not make any difference as to the value of the meter if it had been previously repaired five or six times and if it had been properly repaired, and properly registering gas at the moment. It would be as good as a new meter. Yes; for the purpose of this company and its business, or any gas company and its business. This company does not sell its meters. That is for the purpose for which this company is using these meters or any gas company uses its meters which it purchases. None of them purchase meters for resale. I have examined the

records of the company for the purpose of ascertaining the average serviceable life of a meter. I found that there is nothing in the record to indicate any limit to the life of a meter. I examined the records of meters condemned by this company and by other companies, many companies. Meters condemned in connection with the age of the meters. I have not examined the 11,037 meters since June 1, 1923. I examined them prior to June. I did not examine the books to ascertain the number of meters that were on hand on June 1, 1923, and those condemned subsequently at any period. I don't know how many I found that had been withdrawn from service in May. I did not examine them by months. I had reports of previous years, but I don't remember the figures in those records. I examined them for previous years but I don't remember the figures now. I don't recollect how many I found had been scrapped in May 1923. That is a subsequent year, by the way, not a previous year. I don't remember. I think that Public Service Commission report that they had here would prob- [fol. 1640] ably show it. Public Service Commission's report in 1922 which is marked for identification, (shown witness) refreshes my recollection. About 24,686 meters were scrapped during the year 1922. I examined that. I did look at the record of 1921. I examined their record that was given me by the shop. I did not examine the record at all during the year 1923, so I did not learn the number of meters which the company had on hand on June 1st, 1923, that since have been scrapped. I did learn the number of meters on June 1st, 1923 that were in the Meter Repair Shop. There were 8,073 meters in stock. I don't know how many actually had been repaired and how many of them were new meters, but there were 8,073 in the company's shop, that is in the Repair Department. They usually have a certain number of meters in the Repair Department undergoing repairs and some just brought in for the purpose of repair but I don't know how many were in the meter shop. I do not know how many meters were in the Meter Shop fully repaired and ready to go out on the district nor how many meters were in the shop undergoing repairs. I do not know how many meters were brought in and no work had been performed on them, repair work. A meter that was brought into the shop for the

purpose of repair by reason of the fact that it was in a state of unrepair, would not be in a *unite* as good condition as a new meter. Whatever the cost of the repair necessary on it, would make it a new meter would measure its difference. That would be the difference between that meter and a new meter. If the repair was so expensive that it would be advisable to abandon it, they would abandon it and write it off. It would not be as good as a new [fol. 1641] meter. It would be written off in the ordinary course of business. This thing is turned over every day and the ordinary course of business takes care of it. If there was in the meter house any number of meters which were in such a state that it would be advisable to abandon them, if they had not already been abandoned, they would be written off, show in the list of retirements since. Yes, showing the list of retirements, they are all taken care of in the ordinary business. I also examined into the cost of repairs to the meters. I did it in order to find out what was the age retirement of the meters, if it was possible, the age of meters at retirement. I found that modern meters were retired about as fast as the old ones, that the age had no reference to retirement, and that was the purpose to find out that fact. These condemnations include meters destroyed by fire and violence of various kinds, and I found that the old meters proportionately are not condemned any faster than meters three, four, five or six years old. If you should take the age of meters condemned, you would find that the percentage of withdrawals would not absolutely be the same, but after a few years there seems to be no rule, that is not a consequent figure irrespective of age. It would not be definite enough to say that at any age they ought to all be retired. I found that in 1923 the company spent $335,515 in repairing its meters. I did not examine the books in order to ascertain the amount of money expended from June 1st, 1923 to December 31st, 1923. Not to repair of meters which were on the district on June 1st, 1923, and which I have testified are equally as good as new. The books do not show that. They won't show whether the [fol. 1642] repairs in December were meters on the district previous to June or whether they were subsequent to June without exact analysis. Some of them may be meters put in since the 1st of June. I didn't examine it anyway to

ascertain how much the expenditor-s was from June 1st, 1923 to December 31st, 1923, no matter what meters it was for. I looked at some of the meters that were in the Repair Department, not all of them, some of them were opened up and I looked at them. I went to the Meter Repair Department sometime in July 1923, to the best of my recollection. I was not there on June 1st. Then I could not tell what the conditions of the meters were in the Meter Repair Shop on June 1st, 1923, unless those that I saw opened were meters that were in the shop June 1st. I don't know that that is a fact. I examined some of the meters that were on the district. I went around in various types of cellars to see how the meters looked. I was goind down to examine them as to their state of repair that is, their condition, whether they were properly maintained. That was last summer, in June or July, or possibly August. You cannot tell by looking at the outside of a meter whether or not its internal construction is such as to call for no repairs, but you can tell about the paint outside, a large number of meters that are condemned are condemned on account of improper painting, being in damp cellars and places where they rust, and I went to see how they were maintained, how the conditions were under which they were set. As to how many meters I examined in those cellars, there were about a dozen locations, and [fol. 1643] there were several apartment houses with multiple meters in them, I suppose probably not over fifty or sixty. I went into apartment house cellars and looked at the meters there. Mr. White told me where to look. I picked out the locations, I told him exactly what class of inspection I wanted to make, the different types, open cellar and cellar with a furnace in it and apartment houses w-ere they were set in the cellars and apartment houses where they were set in the kitchens. I think on Atlantic Avenue, I examined the ones in the open cellars. I am not sure of that but that is my recollection. It wasn't any of the company's buildings. My recollection is Atlantic or Flatbush. I did not make any particular memorandum of the locations, because I just wanted to get a birdseye view of the situation, but my recollection is that it was Atlantic Avenue. By an open cellar, I mean a cellar in which there was no furnace and not particularly well closed in, that

was a storage building. The meter in that kind of a cellar was in very good shape. It would be better if there was a furnace. They are more likely to corrode in a cellar where there is no furnace than they are in a cellar in which there is a furnace. That was the only one I looked at at that location. There were one or two in open cellars, and when I say open cellars I mean non-heated cellars and then one or two or several heated. After I looked out in the non-heated cellars, those that I looked at there were all right. They are much more apt to rust, they require more care by the company than in a cellar that is heated. There was one place that it was starting slightly, but it was not damaged.

[fol. 1644] I did not examine the complaints that were made to the company in respect to the meters to ascertain their condition. I know it is general that each branch makes a report showing the number of complaints and the causes. I do not know just what this company does, or its forms. I did not examine the books for the purpose of showing the complaints that were made relative to the gas meters and the complaints which were made because of leaks at the meters. I did not examine any of the complaints or records. I am unaware of such complaints. I am not aware that the monthly reports made by the different branches set out the number of complaints and the causes of the complaints, except that it is a usual form, and I assume it would be true. Complaints of leaks that were found to exist at the meter, I would not know anything about them. * * *

[fol. 1645] On the meters, Exhibit No. 284, that does not include any allowance for the repairs to any of the meters that I found on the district as of June 1st, 1923. The meters are regularly turned over, like checker brick and other units. My valuation given in this exhibit is based [fol. 1646] upon the assumption that none of those out on the district and in use needed repairs, any more than they are getting now, regularly turned over. If I made no allowance for repairs I assumed they needed no repairs. In the matter of office equipment, that consists largely of office furniture, such as desks and chairs, typewriters, adding machines, automobiles, trucks, delivery cars and things of that nature. I did not estimate the cost of reproducing those particular items of property. I took the figures right from

the books on that. It is my understanding the figures from the books showed the original cost of the particular items. I made no attempt to ascertain their value as distinguished from the cost nor did I inspect the various equipment to ascertain its condition. I did not attempt to ascertain, what the cost of duplicating used furniture or used automobiles would be. This furniture was being used, and the automobiles had been used, on June 1st, 1923. Presumably, there might have been something that was not used, but I don't know. I don't know of anything that was *nor* in use. I don't know how long they had been in use. Take the automobiles, for instance; I do not know how long those various machines had been in use by the company. I did not know the condition of the automobiles, except that they were being regularly used, nor how many of them were in the repair shop or undergoing repairs. I knew the condition of the one I rode in was always good. I had no reason to suppose it was picked out. An automobile that is six or seven years old and fully repair-d is just as good as a new one, if it is fully repaired. An automobile would never decrease in value so far as its being in the condition in which it [fol. 1647] was when new if kept fully repaired. It might, even though it is never used it might decrease in value through change in the art or through change in styles. That statement I have just made is not equally true of meters. It is not equally true of gas holders but it might easily be of gas equipment. I have known gas equipment to change two or three times since I have been in the business, due to change in the art, and it might easily be true. I don't know when that will be, but it might be. The old direct fired coal benches and the Wilkinson gas process and the Judge Manowski gas process have all disappeared due to change in the art. That is all that I know of that has disappeared. That is the gas generating apparatus is the only appara- [fol. 1648] tus. * * *

An automobile repaired, that is, an automobile twenty years old, would be as good as a new automobile of the same type, if kept in good repair by the replacement of worn parts, it would be just as good as it was originally. An old Studebaker, say one that is five years old and had been kept [fol. 1649] in good repair would sell for the same in the market. The market is made absolutely on the question of

the age of secondhand automobiles. All secondhand dealers list cars entirely by age. The price is governed entirely by age. I mean something that is ordinarily intelligent, that they mark them down with age. They mark them down with age, and whether a car has been used or not, it is marked down with age just the same. It does not effect its usefulness, to the company, it only affects its usefulness for resale. Anything the company has got, if they try to resell it, outside of the land and buildings, or even the land and buildings, all of which is applicable—not the land, but the buildings,—would be affected by having been in their possession, that is for resale. It would be just as good for the use of the company while the company was using it if it was properly maintained. An old Ford car, say ten years old, would be just as serviceable insofar as the company is concerned as a new one, if it was maintained in good condition, but the wearing parts might wear to such an extent that they could not afford to repair it, but if they did repair it and replace all the worn parts, it would be just as good as a new car as of that date. Whether an automobile increases in the cost of repair as it gets older, depends upon how the repairs are made. If it is completely repaired and you replace all worn parts, it is just as good as a new car. The repairs would increase, the extent of them, as it grows older, depending entirely upon how you take care of the car. If you only go on repairing it as repairs become due, that is true, but if you took it into the shop and completely overhaul and put in new parts, it will [fol. 1650] be just as good as a new car. If you repair each part as it wears out until it gets into its rythm, the repairs will increase. After that it is uniform. If you make the repairs as necessary, defining "necessary" as being the point where you have got to make them in order to keep from getting into an accident, they would increase up to a certain point. The cars now in use by the company are reasonably worth more than their original cost. Let me take that back. Automobiles are the one thing that have cheapened; that is the one thing. Every other thing in this line has increased except automobiles have decreased, so probably automobiles are not worth what they originally cost, although the other accessories are worth a great deal more. That would apply to typewriters and adding machines, they have

greatly increased in cost since they were bought—that is, if they are maintained. I don't know the worth of a typewriter which has been in the service of the company for ten years, as compared with a new typewriter of the same make. It might be a very much better typewriter. It depends on how a new typewriter is designed, whether the man is accustomed to it or not, and very possibly the design of the equipment has been changed, although the design is not necessarily improved. I would not say that an old typewriter which has been maintained in condition as good as new would be worth more or less, because the old one might be worth a great deal more than the new one. It depends on what the improvements are. I could not tell whether a typewriter ten years old and continually used by the com-[fol. 1651] pany would be more or less valuable than a new one. It depends upon the use of the typewriter. The new one might not have any value for the service which the other one is rendering. I did not say the automobile increases with age. I said that if you were trying to sell a piece of secondhand apparatus, if the automobile is five years old it doesn't make any difference whether it is used or not, it would sell at the same price as a used one, if you tried to sell it. This company is not in the business of selling automobiles, however, and that has no relation to this case.

Our working capital is 40 cents per thousand of the gas made by the Brooklyn Union Gas Company and sold by the Brooklyn Union Gas Company, and 20 cents a thousand for the gas made by the Brooklyn Union Gas Company and sold by the subsidiary companies. I think I have testified in the Kings County Lighting Company case, on working capital. It is my recollection that I testified with reference to the amount of working capital necessary for the Kings County Lighting Company. To the best of my recollection, I took the balance of the company, took the actual working capital from the balance sheets and that amounted to about 50 cents, as I recall it. I just took the balance sheet and as I recollect, it was about 50 cents per thousand, actual capital. I didn't do it here, because the balance sheets were higher, a good deal higher than that. This company has a good deal more working capital than 40 cents, and I took the amount that it could get along with, as I thought. Here

it worked out at over 60 cents, and I felt in putting a valuation on this property, as to what was necessary, that I could [fol. 1652] not endorse 60 cents. I thought it was a little high as to working capital, although it actually was being used.

I used 50 cents in the New York and Queens, and the Master found it and the same in the Bronx. There is a relation between those two items. It can be said that a gas company requires about so and so much working capital per thousand. That is a unit upon which I estimate the necessity for working capital. We do that customarily among our profession. In the prior case, I don't know whether I testified on working capital or not. I think I did in the Consolidated case in 1919. My estimate was not 50 cents a thousand there. I don't remember what it was. I did not testify. Mr. Carter put in the working capital. I don't think I put in any testimony on working capital in that case. I am not sure, but I don't think I did. I don't think I testified there. I testified to the condition of the property, but I don't think I testified as to working capital. When you know the number of thousand cubic feet, you need not know very much more to estimate the amount of working capital bearing in mind of course the range of prices of materials. For instance, in 1913 and 1914 we used regularly the figure of 25 cents. Now my figure with the larger company is 40 cents and for the smaller company in some cases, as high as 60 cents; but with a company the size of this company, it is my feeling that 40 cents will probably supply all the working capital that is absolutely necessary. In the old Bronx case before Referee Williams, I testified on working capital. It was 50 cents there and he gave them more than I estimated. I think I [fol. 1653] testified in the case of the other gas companies in Manhattan, that is, in the Consolidated system, I think I did. To the best of my recollection, it was 40 cents in 1919. It may have been 50 cents, I am not absolutely sure of that figure. Prices were very high as of that period. I am not quite sure if this gas oil was about 11 or 12 cents. I don't think it was as of October 1919, but I think I testified as of that date in most of the Consolidated system cases. I am not sure whether I did with the Consolidated itself or not.

I could not tell the average amount of coal that this company carried on hand or had on hand during 1922 or 1923. Whatever the judgment of the engineer of the company demands. It depends on coal conditions, conditions in the coal fields, probable strikes and commercial conditions which have to be settled each year. I have no opinion on the subject at the moment because I do not remember what the conditions were as of those periods. The amount of coal they ought to have on hand will vary every month of the year. Their requirements vary every month of the year, and there is no specified amount that they should have on hand at any two consecutive months. I should say that perhaps they ought to keep on hand maybe on an average perhaps seventy or eighty thousand tons. I am making some such computation as month's supply. It has to be computed, knowing the capacity of the plants to carry it. This company can't carry any more than its plants will handle. My figures of working capital were based on the experience over a great number of years in actual practice [fol. 1654] of gas companies, not specifically tied down to any particular unit. When this company is referred to I have to keep in mind the storage capacity of this company. I have not formed any opinion as to the average amount of coal, in tons, it would be necessary for this company to carry. I cannot do that without a computation, without determining how much gas the company makes, and figuring it back into coal. I cannot say how much boiler fuel this company ought to carry on an average during the year 1922 or 1923. Without a computation, predicated on its make, the company would use about 33 to 34 pounds of generator fuel per thousand feet of gas. I should predicate it upon two months' consumption of coal. In the boiler fuel the company will use about 8 or 10 pounds in addition to its own tar. I should predicate that on about two months' average. I do not know that the company can store oil; about thirty days' supply of oil, but I do not know that it has that much storage capacity. As to how much cast iron pipe should they have, that will vary tremendously, it all depends on conditions at the time; it will vary from every month in the year from year to year. There is no specific amount. I know that the company usually purchases its cast iron pipe in December for the succeeding year, but it is not delivered in December. Some-

times they make a purchase throughout the year, that is at different times of the year, but the bulk of their cast iron pipe is contracted for in December, but not delivered then. As to how much money is required or how much the average quantity of gas appliances should be carried by the company, like cast iron pipe that varies from year to year, based on varying business conditions and there is no speci- [fol. 1655] fied amount which you could say would be required exactly. The company buys the appliances not only for their own business but for the subsidiaries as well. I don't know whether they purchase them at one particular time in the year, or throughout the year as needed. I don't inquire into that. I don't know the terms of credit that are extended to the company in the purchase of their oil, the purchase of their coal, nor their generator fuel, coke or oil or bituminous coal. I do not know the terms of credit that are extended for the purchase of cast iron pipe or any gas appliances, or the terms of credit of any of their material. Those terms of credit on those various items would not make any difference in my opinion as to the amount of working capital which the company might need. To some extent our working capital varies in accordance with the purchase price of the materials. If our oil was selling for eleven or twelve cents or eight cents, the working capital would be more than if our oil was selling at 4.8 cents, and likewise true, that would vary in accordance with the cost of the coal and the cost of the cast iron pipe, within limits. In some of these other cases when I testified in 1919 and some of the other years, the cost of the material then in the market was different from the unit cost today, and therefore I had a different opinion as to the amount of working capital necessary at that time and that the amount of working capital necessary then would not necessarily be the same as the amount in my opinion necessary now; and that depends upon market conditions, somewhat. I do not think I definitely testified that that factor would enter [fol. 1656] logically, and I said my recollection was that prices may have been enough different there to have changed it. That would necessarily be a factor to be taken into consideration. I did take it into consideration. I do not think I compared in 1920, my allowances of working capital in years gone by, with the allowances that I have

made today for 1923. I compared it in 1914. I used 1914. I stated here awhile ago, I did not remember just what I had used in 1920 whether I used the same figure or different ones. In 1914 I remember very distinctly what I used. I do not recollect the prices of materials, particularly oil, as of 1920. As to my examining into the question of how much it was necessary to meet the weekly payrolls of the company or the semi-monthly payrolls or the monthly payrolls of the company, that is a function of the amount of gas, and in using the unit of gas I take into consideration all the expenses. The labor is so much per thousand, and you can get it right off the reports in evidence, the reports in evidence showing the labor per thousand feet of gas, and they will show on their face what the relationship is to the case.

This company has on deposit, money received from its consumers, $1,700,000. I am familiar with that fact. That deposit constitutes an indebtedness by the company and yet it remains on their books and the money remains in their hands substantially for a continuous time, but that fact has no bearing upon the amount of working capital which the company needs. Prior to taking the witness stand I had not formed an opinion, as to the amount of [fol. 1657] money that was required to meet the weekly or semi-monthly or monthly payroll of the company, that is not separated from the other expenses only as a part of the other expenses. I ascertained how rapidly the company received its money from consumers after the register of the meters had been taken and the facts in that regard I had in contemplation when I expressed my opinion as to the amount of working capital needed. That fact is shown in part by my statement in my exhibit. On the average about twenty days elapsed between the furnishing of the gas to the consumer and the sending to him of the bill which transfers the debt to the status of an account receivable. That is part of it, and the balance of it is in the outstanding accounts receivable. The fact that Mr. Cummings read from the text of my exhibit was the fact that I had in contemplation in helping me to arrive at the conclusion of what working capital this company needed, was one of the factors.

[fol. 1658] Brooklyn, New York, May 14th, 1924.

ALTEN S. MILLER

Cross:

Omission and Contingencies, that covers small units or terms of property that were overlooked in the inventory to a very small degree. It mainly covers other items. It is intended to cover everything that may have been overlooked in the inventory, but that is an extreme minor part of it, because my inventory is very carefully prepared. Any omissions in my inventory would not be offset by possible duplications in my inventory. I know that is a fact, if I erred, I think I would err upon the side of leaving something out rather than putting it in twice. I have guarded against a possible duplication, by personal checking of the units in the field. I have made every effort to find everything, but it is very easy to see that you haven't the same thing in twice, and it is not so easy to see that you have in everything. If the thing were large; you might not have some of the small items in twice, not when you go over and check them item by item you do not get them in twice. If you checked them item by item, you might lose some very easily; you might overlook something. In the case of going to a room, for instance, and checking up the gauges and thermometers, there may be certain gauges and thermometers which are out of sight in that room; the piping is more or less complicated, and there may be some of it which is out of sight, in which case you would lose [fol. 1659] it. In checking up the pipe lines there may be some—the pipe lines, many of them, are out of sight, and some of them may be omitted, and yet there is no possibility of duplicating them because you check them off as you see them. I did it with the care which I ordinarily employ, and there was a good opportunity of missing some things and there was no opportunity for duplication. I used great care in making the inventory; I tried to see that I did not omit it, but there are some limits to the time, there are some limits to the work of checking up small items, and there is no use in making an inventory and spending more than they are worth, perhaps, to check them

up. The item also covers a larger quantity of property which had been delivered and paid for than could be checked up now in the completed structures and equipment. Our allowance for such quantities of materials that were necessarily purchased and which cannot now be checked up—is one of the elements in these omissions and contingencies. That is a much larger element than any oversight. The failure to purchase at the lowest market price is the largest element in our omissions and contingencies. The inventory is made using the lowest market price of every unit, and as a practical matter it is utterly impossible to do that in practical construction. It is impossible to buy everything at the lowest market price and get it delivered at the proper time,—at the lowest market price at [fol. 1660] any time. It is impossible to buy at the lowest market price at any time. I have got the lowest market price of some time in my exhibit, and therefore I have it of any time, of which some time is. I mean that although the market does not fluctuate you have got to have equipment at a certain specific period, a certain time, and in order to get it at that time, you frequently and usually do, in certain items, pay more than the current market, current market being predicated on deliveries of four, six, eight or ten months or some longer period, whereas you want it promptly and must pay a premium and do, practically pay a premium over and above the current market price. It was not my idea that the market price fluctuates, because prices are predicated on that day's market, and I estimate that you would pay the premium if you had bought them that day, if you had to have something delivered a little ahead, or may have had to pay something for delaying your deliveries a little. It is impossible to have everything delivered at exactly the time you require it at the minimum price. Any premiums that would be required for advance delivery or for delaying delivery are included in this five per cent. That is included in that allowance. In the units shown in my inventory I adopted prices as of June 1st, 1923, the lowest market price. It would be impossible to get the deliveries at the time required. That is so in any construction of this character. The five per cent., among [fol. 1661] other things, is designed to cover that fluctua-

tion. That is one of the elements in the five per cent. There are some other items in it. In the materials that I purchased over and above our actual requirements, that could not be checked after the plant was constructed. They are hauled away to the dump, like cement rolled into the ground, broken stone sold for junk, broken pipes, some gauges may break during construction. There are many items of material that are broken, and some stolen, some of the brass work of the company is stolen, as a practical matter, during the construction. Anything like pipe or steel or any substance of that kind, would not be transferred during the construction, to the Material and Supply Account. They would carry it in their Construction Account. It would be lost if it was broken; if it is cast iron pipe broken, it is lost; if there are cocks stolen, they are lost; if any brass goods are stolen, they are lost; if gauges are broken, they are lost. In these omissions and contingencies, articles such as pipe do not apply in any case to the distribution system; they do not apply to the buildings,—only to the equipment put in by me as general contractor. A part of it covers cement and broken stone and gauges and things of that kind. That feature of the allowance for omissions and contingencies—strikes, labor difficulties, interruption or delaying of the work, adverse [fol. 1662] weather conditions, delay in shipments, travelling expenses necessary to get the equipment which has been delayed, and unforeseen extra work. I mean by that that after a plant is completed and you have moved everything away there is certain extra work necessary in order to accommodate a large number of various contractors to permit them to work to the best advantage; there is certain bridging in the yard, and extra work paid for in moving materials which cannot be checked up after the work is finished. Here in a plant of this kind they would have a number of contractors working, and it is necessary to co-ordinate their work, and that is expensive at times. By that I mean that a man will not be in the way and does not interfere with a builder, and the builder does not interfere with the man putting machinery into a partially completed building, it requires extra bridging, and requires extra payment at times for overwork in order to finish a

place, a certain part of the work, in time, in order to let the other contractor get in without delaying him, or if he is delayed, he will put in a bill for extras on account of delay. It covers all of those contingencies. The item of expense would not be largely made up of overtime or building bridges; those are some of the items in it. I cannot give all of the items because there are thousands of them, tens of thousands of them; there are always little items of expense in construction of this kind. I have given counsel some of the items. I have given probably the [fol. 1663] biggest items that are specified in my written statement. Those are the largest items. But there are ten thousand small items—carfares. I do not think there is enough there to allow anything for strikes. I think strikes would come over and above, and that is just an incident. Five per cent would not pay for it and does not pay for it. I doubt whether there is enough in here. As a practical matter we find omissions and contingencies run higher than 5 per cent. That is a minimum figure. I doubt whether there is sufficient to provide for strikes as it now stands. There may be, but I doubt it. I have not analyzed that 5 per cent, at any time under any circumstances to any item; it is just following the ordinary method of accounting, and I have used our ordinary methods of accounting, and all of these items are lumped. I doubt whether there is or not. I do not believe there is enough to provide for the other items. If there is not enough there would not be any; if there is enough there is some. If there is not enough there can not be any. If there is nothing spent for anything—I don't know what counsel is talking about—that question is meaningless. There is no specific allowance for any individual item in there, it covers everything in it. Whether there is a sufficient allowance there for covering that item interruption or delaying of work from adverse weather depends on what allowance you have for the other items. Five per cent would be enough for delaying on account of the weather if we [fol. 1664] apportioned it all to that. If we applied the entire 5 per cent., there would be enough to cover that one particular item. The record covers the items specified in the record. The record shows that there are many more

items than this one particular item. The part of the 5 per cent. that would be a reasonable allowance for the interruption or delay of work from adverse weather depends on the weather. We have the kind of weather we usually have in constructing plants in Brooklyn and that is variable. The work is interrupted by the variableness of the weather here in Brooklyn to the extent that we probably lose, depending on the class of work we are doing, on our outside work I think ten or fifteen days a year—outside work. On inside work you would not lose so much. On the outside work we would lose twenty or thirty. Twice ten is twenty and twice fifteen is thirty. I doubt whether there is enough provision in our allowance for loss of twenty or thirty days, in addition to all the other items, but there would be extra cost on account of those losses which is not figured in the underlying details. I know I have not made enough in the whole 5 per cent. to cover all the items underlying it. It costs more than that as a practical matter. I would not allow any specific amount for that one particular item taken alone. We do not keep our accounts that way; we lump all these items in our accounts.

[fol. 1665] In making this estimate of delays in shipment, the estimate is based on the assumption that everything will arrive in the order and in the time to permit the plant to be constructed at the lowest market price as of the period. Now, as a practical matter we find in construction that there are regularly delays in some items. I do not mean any one item is regularly delayed, but in practice we find that there are certain delays. Now, that will either delay the general contractor or delay the sub-contractor getting out of the way of some other work, and that means sometimes we have to pay a sub-contractor something for his delay, or there comes the premium for expediting; instead of shipping a large item in by freight, sometimes we ship an item in several hundred miles by motor truck. At other times you just have to pay for the delay to a sub-contractor or you have your general contractor's force somewhat tied up because he can not go ahead and finish the work, because some items are delayed. You make ample provision for those elements, depending on how you put the 5 per cent. If you apportion all the 5 per cent to them, yes.

We use 10 in our contracting work, in advance. It is at least 5 in appraisal work with me and my associates. This allowance of Omissions and Contingencies covers the plant [fol. 1666] equipment alone. The equipment in holders is included in this figure of $15,113,366. That appears on page 2 of Plaintiff's Exhibit No. 283. By "or other conditions" I mean there may be a premium for advanced delivery, or there may be something might happen to the plant, in manufacturing a part, or some change in our plans, and we might want a machine a little ahead or might want it delayed. The coordination of a large number of contractors is a big thing, and many unforeseen contingencies arise and these other conditions would be the unforeseen contingencies. Taken in connection with the other things, I have made a provision of a suitable amount for that. I have made sufficient for all of them. I think I explained unforeseen extra work a little while ago. It is the coordination of the various contractors and the expenses incurred to get one contractor out of the way of the other, or if the excavation is in the yard and there is hauling necessary across, sometimes we have to move the materials, because a contractor may be slow in his work and we may move his materials in order that another contractor may come along. There are times when the cement or sand or the particular piece of machinery does not come up to specifications, in which case you have got to move it and replace it, which in turn means delay and some expense. Sometimes the machinery does not come up to specifications after it is delivered. You have to put in a new bearing in a machine or something happens to it, or there is delay in shipment, or the fact that it does not come in proper condition.

[fol. 1667] As to the delay involving extra cost, the extra costs grows out of the interference with the general contractor or sub-contractors. The cost of sending particular material back would be an extra cost, although that might fall on the sub-contractor. If it is a question of a piece of machinery the extra cost just merely of taking the part out and sending it back and replacing it would fall on the sub-contractor; but the general delay falls on the general contractor or some other sub-contractor. That would apply to the part or parts of machines due. They might send

us the wrong part or parts or they might not fit. There would be delay by reason of sending it back, and the delay would fall on the general contractor or some other sub-contractor. I have not made any provision in any of our costs or estimates based upon any possible decrease in price levels or lowering costs of any of these items after June 1st, 1923.

Referring to Engineering and General Contractor's Expense and Profit, the engineering work includes general design to provide for the construction of large gas properties. We are going to reconstruct this plant as it is. It was based on that. I would have to make a general design. It would take probably a year for our engineers to make a general design of the plants as they now exist. Of course it depends on how large a staff could be found to work on it, but I think that the staff that we have or would be likely [fol. 1668] to get together would probably take at least a year to do it. As to the procedure of our construction, you would first make up your designs, your drawings and specifications, and then get bids on the individual units and make up a program of deliveries, as to the progress of the construction of the various parts; you let the sub-contracts and order the equipment and organize your construction staff, with the understanding that everything would come in in its regular order, in order to construct in accordance with the plans. I had no particular idea on the subject of when or how the plants would be started. I did not form any judgment as to how the work would proceed, or whether any of them would be constructed first. They might all go on at the same time or they might not. In order to do it in two years—which of course it could not be done in—it would require that all of them go ahead at once, I should say. I have made no plans at all as to the method of construction. The plant it would take the longest to construct is the one that has the most equipment in it. I do not remember at the moment which that is—probably the Williamsburg Works. That seems to have the most equipment in, and that would probably take the longest.

Under our allowance for engineering, superintendence and general contractor's expense and profit, the work under this heading includes location surveys. That is surveys of the property showing the boundary lines

and the layout of the equipment on the property, [fol. 1669] That is, the locations of the buildings and the equipment in the buildings in respect to the lot lines. The general and detailed designs and drawings; that is what I had reference to a moment ago when I said the general design of the plant. That generally cost about 4 to 5 per cent. of the work done. Five per cent. of the work done would be $2,100,000—odd. Four per cent. would be $1,680,000—odd. It would cost four or five per cent. It would cost somewhere between the two general figures in dollars that I mentioned to make the general and detailed designs and drawings. It would cost between $1,680,000 and $2,100,000 to make the general and detailed designs and drawings of the company. The general supervision and specifications would include the specifications. That goes with the drawings. Such general supervision over the work during construction as to insure that the work was being carried out in accordance with the general plans would come inside of the higher figure. It would be included in the higher figure I mentioned. The $2,100,000 would include all of the engineering. That is, the surveys and the drawing of the designs and specifications, and then the supervision. That applies to the plant and the mains and the buildings, but not to all of the property. It does not apply to the services and meters; everything except that, and the equipment account, the equipment and the land. All the working capital. It did not apply to the general equipment accounts that I have taken from the books. [fol. 1670] To undertake a job of this magnitude such as used and set out in our exhibit, you would have probably a president, a secretary, auditor, bookkeepers, stenographers, a very large corps of engineers, office boys, and you would have air compressors; engines and boilers; and picks, shovels and mattock tools, a vast amount of equipment in the form of labor and material. The form of labor is engineers and superintendents, timekeepers, laborers, boiler makers, blacksmiths, machinists, tool makers, the usual line of tools that are in machine shops, boiler shops, foundries and construction forces. I was thinking in connection with organization—a general contractor would not necessarily have to have the shop equipment. The shop equipment would be supplied by the sub-contractors gen-

erally. He would have all of the field equipment—all of the office organization and field equipment, including engineers, draftsman, and so forth. He would not necessarily have any of the machine shop men or the boiler shop men. He would have the field men. The general contractor who undertakes to do this work could do it more expeditiously and also cheaper, than if the company would undertake to organize the same forces, because the company could not organize the same forces. The contractor has a seasoned force. The company would have to organize new and untrained forces. The contractor has a very large number of engineers, superintendents and field men. By "field men," I mean the head foremen and a certain number of head [fol. 1671] riveters and a certain number of riggers and erection men that go out in the field and work with local mechanics. In doing this work we send out trained men that work with us year after year, year after year. Probably on a holder, for instance, we will have perhaps five or six of our regular staff and then we will have certain following in riveters and the riggers will be generally our regular staff and sometimes we have certain following in riggers. So that, probably, starting on a five million holder or ten million holder, we will have twenty men that have worked on similar work at other places and some of those men of course would be working as sub-contractors' men, but then others would be working and co-ordinating the different work in the plant. That is, we would have some of our experienced men working alongside of the sub-contractors and more or less green men. The holders are a part of the plant. We have men who go out and put in this machinery who have built the complete plants and are trained in the organization of their own laborers and mechanics, and trained in the co-ordination of those men with the sub-contractors. I have not the slightest idea how many men I would send out to construct a plant of this capacity. It would require a very large number of men. In laying the mains and services and the meters, the general contractor would have practically such an organization as this gas company now has—consisting of engineers, superintend- [fol. 1672] ents, foremen, timekeepers, and men of that class; caulkers—men who are experienced in the laying of distribution systems. We have an organization that is ex-

perienced along that line. The same class of men would be experienced in yard connections and in the main system, they are so generally similar. As a company we have done very little or practically little—in laying the distribution systems, but we have done a great deal of yard piping. There is quite a similarity in laying pipes in the yard and in the street. There are certain problems that you get in the yard that you do not get in the street, and, vice-versa, certain problems in the street that you do not get in the yard; but generally they are similar. It is much cheaper to let a general contractor, who has the organization equipment, build the large plants and install the distribution system, than it would be for the company to organize and train a special construction force for that same purpose. It is based upon the ground that a contractor has such a trained organization for the building of plants and holders and distribution systems such as I have just outlined. The contractor would have the machines and the equipment necessary to construct the distribution system, in whole or in part. It would be predicated upon his having it in whole or in part, or getting what is necessary to do it. It would consist of the ordinary excavating tools, and in some cases probably, or in many cases, where it would be done in a [fol. 1673] hurry, you would want air compressors, pneumatic tools; then the derricks and trucks, equipment for handling the pipe, unloading from the cars into the trucks, and off the trucks on to the ground, into the ditch. Because of the equipment and also the fact that the contractor has the more experienced men it would be advisable to utilize the organization of the contractor rather than for the company to undertake the work itself, and then the prices, the unit prices, were predicated on experienced men and not on a green force. If the green force were to do it the unit prices would not prevail. I included no specific amount for the general contractor's profit. There is either 9 or 10 per cent for the general contractor's expense and profit and four or five per cent for engineering. I can not separate the profit from his expense. It is 9 or 10 per cent. for the general contractor's expense and profit. Practically we find that our field expense is about 7½ per cent. So that would leave 1½ or 2 per cent. Based upon our experience that is about all it is.

Our interest during construction is to cover the interest on the money which we get through the flotation of our securities until we reach the period when operation begins. That covers the interest on actual expenditures. I do not know where the money comes from, but actual expenditures, wherever it may come from, until the plant is ready to be in operation, and that is based upon 8 per cent. In that I [fol. 1674] assume that the company bought various parcels of land for the erection of their plants. Then we have allowed 8 per cent. on the purchase price of those various parcels of land—that is, for a period of two years, until it is ready to begin. As to the allowance for our cost of buildings and apparatus, I assumed that we would start at zero and wind up at the end of two years with the full expenditure. So I have averaged the expenditure so as to make an expenditure on the full amount for one year or half the amount for two years. On those items we allow interest at 8 per cent for one year. That also includes not only the building and the apparatus, but the mains, the engineering, general contractor's expense and profit, and administration. For the administration we allow 8 per cent for the period of one year. There I mean the company organization and sufficient inspection to check up the fact that the work is done in accordance with the drawings and specifications, and check up the bills, pay the bills; in other words, enough organization to see that the money is wisely spent. This company is not operating. Under this reproduction it is not an operating organization; there is no operation. This is a company's organization to build the plant, to build the property and pay bills, and see that the money is wisely spent. The company would have to have a President and probably Vice-President, Secretary and Auditor, book- [fol. 1675] keepers, telephone girls, office boys, janitors and a full company organization, very similar in general form to such an organization as they now have. In addition they would have to have superintendents, inspectors and checkers. Not exactly timekeepers, but checkers to check up the timekeepers who were putting in bills, to be sure that the money that is being expended is being expended properly and wisely. My statement includes what I said it includes, in my estimation. In that I allowed the interest at 8% for one year. The interest on the amount of expense for the organization is computed in my interest.

That organization would have a great many more engineers and inspectors than they now have and would have no ledger clerks, no consumers' ledger clerks, nobody connected with consumers. The form of organization would be the form of the general corporate organization; it would be similar to theirs or similar to any other corporate organization. I have not the slightest knowledge what interest they pay on their mortgages and securities. As a construction enterprise I should think the allowance for interest would probably be less than the amount paid on their bonds and mortgages and other securities. If this were floated as a construction enterprise it would probably be less. I do not know that the banker has floated any securities. As a construction enterprise, a builder's construction enterprise, I think that the cost would be more than 8 per cent. I think 8 per cent. would be the minimum [fol. 1676] that a company of this kind ought to have or would have to have in order to secure capital, whether it is an operating or construction company. Probably in order to float the securities, bonds and stocks, they would have to promise more than 8 per cent. I think as a construction enterprise you would have to promise 9 or 10 per cent. at least. Assuming that the securities that are outstanding that the banker realizes money on, by the flotation of bonds and stocks; as a construction enterprise the interest rate on the bonds would probably be at least 7 per cent. I adopted the rate of 8 per cent. here, because I think that a company in actual operation, a seasoned company, must put from its earnings 2 or 3 per cent. back into its property and must have 7 or 8 per cent. on its securities to raise new money, and I think therefore that 8 per cent. as a construction enterprise is a minimum. I appreciate that I am concerned now with an effort to ascertain the cost of reproduction. One of the elements of that cost is the cost of financing, and I have here an allowance which I call the cost of financing. That is different from the item that I am now talking about, namely, the 8 per cent. allowance of interest on money spent. The money I think would cost at least 8 per cent. during the construction period, to the company, and I think that the company would be entitled to an earning of 8 per cent. "Cost" depends on how the company finances it. As a financed proposition, when I speak of the [fol. 1677] cost of money I mean the cost paid to the

bankers for floating your securities. That is in my item of cost of financing. I also include any interest during construction. I figured what interest the construction company would actually pay. They would pay 8 per cent. I do not think that you could finance it, you could not finance any construction proposition on less than an 8 per cent basis. I think you would have to promise at least 7 per cent. We charge 8 in our allowance because you could not get all your money in bonds. The amount that you pay the bankers for floating stock and bonds; that is, the spread between what the bankers get and what the public pays for it is the cost of financing. That is the spread, the cost of financing. Now, the return that is necessary to give is the interest. The company would unodubtedly have to pay 8 per cent. interest in addition to the spread. In making up the interest during construction, that is in making that up alone, I had no consideration as to whether the bonds were long or short, or whether there were any bonds. I have simply estimated what it would cost the company during the construction period under any conditions. In this item there is no reason for including as an interest charge anything more than the actual amount of interest which the company would have to pay on the money. If there was any further expense in that regard, that would be recovered into our item Cost of Financing. Going concerns usually [fol. 1678] float as long term bonds as they can, as the market will take. A concern which is about to be constructed generally floats as much as they can. They do not ordinarily have tremendously long term ones, but they float what they can. Whether they float long term bonds or short term bonds depends somewhat upon the money conditions and the character of the enterprise. If money was for the moment demanding eight or nine or ten per cent., whether it would be good policy to float a long term issue depends entirely on what rates they could get and what the probabilities are of the enterprise paying out. For construction enterprises as of June 1st, 1923, without any history, money cost about eight per cent. The advisability of floating a long term bond or a short term bond on June 1st, 1923, I would say depended entirely on what rates they could get on the long term and short term bonds. About the market conditions on June 1st, 1923, I based my

opinion on actual experience of companies, what they were paying as of June 1st, 1923. I took actual experience and based it on actual experience.

This Brooklyn Union Company, not construction, but this Brooklyn Union Company issued some bonds shortly subsequent to June 1st, 1923, and I base my judgment on the actual amount they paid for bonds, which is an underlying security; the Consolidated Gas Company of Baltimore is-
[fol. 1679] sued securities early in 1923, and I know what they actually cost, underlying securities. They cost more than I have estimated the actual cost of stock and bonds. The Consolidated Gas Company of Baltimore raised money which was being spent June 1st, 1923 in plant construction. It was an initial construction. The company was a going concern, but it was making what was initial construction, putting in new equipment in its plant. This company on June 1st I did not assume was a going concern. I know of no company which raised money on June 1st or during the month of June for the purpose of constructing a new gas plant. The rates would be different from a company which is a going concern from one which was being in process of construction. The rates of money for a concern which is being constructed de novo are greater than for one which is a going concern, on June 1st, 1923. I know of instances where money has been raised for additions or additional constructions for going concerns during June, 1923, or June 1st—not exactly, but thereabouts, and those concerns were the concerns which I mentioned a moment ago, being the Consolidated Company of Baltimore, and Brooklyn Union Gas Company. That is, Brooklyn Union reimbursed the treasurer for the construction that had been completed; issued securities, and Baltimore I think that the money was raised for new construction—new additions. In advancing money to a general contractor in the construction of a plant, the payments would ordinarily be made
[fol. 1860] to him as the work progresses. The usual practice about it varies with the contractor and the company. Sometimes they pay 90 per cent; sometimes they pay all bills. I simply assumed in my estimate that it would be paid on an average during the period; that one-twenty-fourth of the construction money would be paid each month, on the 15th of each month during the period, so that at the

end of the two-year period the amount would be totally paid to the contractor upon the completion of his work. The usual way is to pay as the work is constructed, as I just stated. It is not payable one-twenty-fourth. It is payable as the work is constructed. Generally, the larger payments are made during the earlier period of the contract, and the interest will generally run a little above the average; but I have just for convenience figured it as an average. The larger payments are made during the first year. Take the holder on Fifth Street that we just constructed at a cost of $372,000 as shown by the exhibit. That money was paid for a lot of material before it ever left our shop. Large payments were made before the material ever left the shop, and then subsequent payments were made as the work progressed. And when we finished the holder, they did not have it actually paid for till we presented our bill. When we finished the holder, we presented our bill and the bills were paid. I do not know that the holder is completed at this minute. It was not completed [fol. 1681] the first of the year, and I do not know whether it is completed now. I have forgotten the amount of work we did for the company in 1920. I think about two years elapsed after the completion of the work until our final payment. We had the company's notes, and they were paying us interest. I think it is two years, two years and a half, after that. We had the company's notes for that. We extended credit over two years, in a recent case. We do not usually have to do that. The largest expenditure the company would be put to in the construction of a plant would be the purchase of steel and cast iron pipe and other purchases, the largest individual items. Many of the items would be paid by the general contractor—it depends upon the nature of the contract, whether the company prefers to pay its own bills. Some companies have the general contractor itemize his own bills—I mean, approve the bills of the sub-contractors and pass them on to the companies for payment. Others prefer the general contractor to pay the bills and re-bill them. It gets to be a question of company preference in a case of that kind. It did not make any difference which would be done here. It would not alter the picture. I made no assumption about that. I mean it would not make any difference in the expense. I

assumed the services and meters would be put in after the rest of the plant was completed. That is, I assumed the plants would be all complete before any operation started. [fol. 1682] I did not assume this money, as it is not being used, is kept in the bank. That would cost more in that case. I assumed no idle money at any time. This construction project is not charged with any idle money. You have to pay seven or eight per cent or nine or ten per cent to keep the money in the bank, and you get only three per cent for the bank. You would not make money by that project. It is much better to pay it right out if you could get somebody to advance it to you, just as you are using it, and that is what I have assumed, that it is advanced just as it is spent. Whatever would be necessary to build the project—$103,559,637 would be obtained from the flotation of the securities. It depends upon when the plant was built whether they had $103,000,000 on hand on June 1st, 1923. I have not assumed any particular time for actual construction. I have simply taken the prices as of a particular time. I have taken a period of two years, beginning at no special time and ending at no special time. I have assumed that it was obtained at the rates on June 1st, 1923. It might have been obtained two or three years before or since, but just at the rates prevailing as of that date—the rates per month. I have assumed that no money would be kept in the bank, because it cost money to keep it in the bank if you get it in advance of the time it is being used. It is very much cheaper if you can get the people [fol. 1683] who are furnishing you money not to charge you interest on anything until you have to pay it out, and I have assumed that the interest would only be computed on the money as actually paid out. That is, I assumed that they would go to the banker and get money and then pay it right to the contractor; that there would be no interest on idle money. I knew the actual method in which the plant was constructed here. That is, by piecemeal construction rather than by construction as of two years, or growing up overnight like a mushroom. In arriving at the allowance for taxes during construction I considered that the taxes on land would be paid during the period of construction, which is two years. I took the actual taxes which the company paid on its land for the year 1923. The taxes

on improvements I figured would be paid only about six months, and I took half the taxes on improvements that the company paid during 1923. Taxes will be paid for only six months on improvements. It is my recollection that the taxing authorities usually view the property in October of a given year, and that the levy is as of October. And during the first year I assumed that there would be no taxes laid upon the improvements, but only applied to the land. During the second year—I figure you would start in the summer, say, construction. During the next fall there would be no taxes for the succeeding year. Then getting back to the summer you have twelve months, and going over to the fall you have gotten about fifteen months, then [fol. 1684] there would be a levy for the succeeding year on substantially everything and half of that would be applied to the construction period and half of that to your operating period. I assumed the same tax rate which existed in the Borough of Brooklyn on June 1st, 1923. Of course the arrangement for financing must also be made. I don't know the exact amount that would be incurred by the company for the obtaining of its charter. It involves advertising. That is just the charter of incorporation. I don't know what the expenses are. I don't know whether there is a charge predicated on capital stock in chartering in this State. There is in some. That covers our expenses to incorporate, and obtaining the charter of the company to do business as a gas corporation. I cannot give any idea of the expenses that would be incurred in that. I don't know just how much counsel would charge for drawing up the papers. This was intended to cover the preparing and the filing of the necessary application. It depends on what they are incorporating. Here is a one hundred million dollar project, and I would assume attorneys would charge probably anywhere from twenty-five to fifty or seventy-five thousand dollars. That is for advising what is to go in the certificates and putting the papers through and getting the certificates. It would cover conferences, advice, preparation of papers and securing of the certificate of incor- [fol. 1685] poration. Aren't there formalities in the filing of the certificate? The counsel would be in touch with the organizers, would want to know what their plans were, how the work was to progress and how it would—whether it

was organized to hold other properties, whether it was to organize merely as a gas company to make and sell gas in a particular territory, and then would draw up whatever papers are necessary to cover such powers as the company would require for its business and then get those certificates through; and considering that it was a very large enterprise, they would expect to be paid somewhat on the basis of the enterprise. That would involve questions of taxation, that is the organization taxes. I don't know of any taxes beyond that. I have never shopped around among the legal fraternity to find out and advice myself as to how much it costs to draw incorporation papers, and I did not include that amount in here. Counsel asked me how much I thought it would cost. I told him what I thought it would cost, but I did not say that I had used that. I used no specific figure. This is merely a percentage of the cost of the enterprise for all preliminary work based on my experience and without any attempt at subdivision. I made no attempt in the slightest to subdivide. I did not divide it, but took it into consideration that there would be some cost, but no specific amount. My present idea of it is that if there was, and there certainly would be expense for in- [fol. 1686] corporation, I think it would be liable to range from twenty-five thousand dollars to seventy-five thousand. I don't know what papers, aside from the incorporation papers, it would be necessary for the counsel to draw in completing the organization of the company. They would have to get the franchises, local consents; they would have to go to the Public Service Commission—after they filed the certificate of organization I don't know whether any other papers would be necessary. You would have your by-laws and charter; you have a company by-laws which are usually drawn by counsel. I made provision for all the work the counsel would do, all kinds, natures and descriptions. Part of the work the counsel would do would be drawing the articles of incorporation and also the by-laws, and advising with the company and ascertaining the powers which they want stated in the papers. That is part of the work of counsel in organizing. I don't know whether he would do any other work in the organization or not.

By franchise I mean to use public streets and public places. I made no specific allowance in dollars for expendi-

ture in obtaining special franchise. The work would cover applications to the Public Service Commission, advertising, perhaps a great deal of argument with the Mayor if conditions were as they are now, and public meetings and much general work of that kind. The conditions which exist now existed on June 1st, 1923. I think it is custom- [fol. 1687] ary to make an application to the Public Service Commission; I think that is the law. I was going to make then an application for the certificate of convenience and necessity to get what you call the form for the right to do business in a specified territory. I say I suppose under existing conditions, seeing the Mayor perhaps would have to be done. I made no allowance for meeting the Mayor in the expenses. The special franchise would be obtained through the usual rules. I could not go into the legal end. I will have to refer you to counsel for the usual method of obtaining franchises, I take it. I used my knowledge of the general expense on these matters. I allowed five per cent. on the cost of the property other than financing as the moderate cost of the preliminary development. To obtain the franchises we would go to the Public Service Commission. I presume it would involve a lot of advertising as to the advantage to the public in the daily papers, and explanation to the general public as to what this company wanted, what would be the result of their getting this franchise, to have the gas, and also certain specific legal notices, I believe, that are necessary. After they succeed in getting the approval of the Public Service Commission, I really could not say what would be the next step in obtaining the franchises. I think I would have to rely upon the advice of counsel. I did not ask counsel anything about my estimate at all. I did not estimate it specifically. That [fol. 1688] is part of the expense. I take that back. I did go into that. Not in this specific case—in another case with counsel. I did go into it in another case with counsel. That was in the case of the Standard Gas Company of New York, and I conferred with Judge Ransom there. I did not go into great detail. I asked him about whether there would be any expense in connection with this, and he went over in general what would be the expenses. I do not know what I would go to the Mayor for. I should think probably the Mayor would come to us. I think he would come

over with a club to keep us from coming in. I do not think he would want us in. I have no idea how much that would cost. I don't know that we ever could convince the Mayor that it was all right to start the gas company. I would not start it at all. I do not know how I would reconstruct it. I guess we would have to reconstruct the Mayor. I do not know whether we would or not have to get the Mayor's consent before constructing. I do not know whether I have or not estimated the cost of constructing without the consent of the Mayor. I have stated I allowed nothing in for the cost of convincing the Mayor. I do not know whether there would be anybody else we would have to convince of the necessity of the gas company aside from the Mayor. I do not know whether the certificate of convenience and necessity would carry the franchise or not. That I would have to determine from my counsel. I have [fol. 1689] seen a few franchises and paid taxes on a few, and had at least one of them valued in a rate case. Directly, I do not know whether we would have to pay anything for it or not. Indirectly, yes, it would cost a good deal. You would have the legal expense of preparing your forms, for the franchises, presenting them, arguing them, and the legal notices, all of which would be expenses. Presenting them to the Public Service Commission, and publishing notices, that we are after it.

About local consents, I do not know just how far it is necessary to go in that. It is probable that some of this company's pipe is on private property. Very usual. You would certainly have to obtain consent for the pipes to go under navigable waters; pipes crossing railroad tracks, a consent would have to be obtained. I do not know whether it would be necessary to obtain any local franchises in this territory or not, outside of the general franchise. The expense is included with the rest, not specifically apportioned. I can not give any idea how much it would be. If it was necessary to make any, I intended to make the allowance. The permits and local consents necessary for the company to obtain were what I referred to in my answer to local consents. It is private crossings, public crossings. That is practically what I had in mind—permits. To begin with, none of the sponsors are employed. The are the promotors of the enterprise. There would be several; there might

[fol. 1690] be a number of them, and they would be the employers and not employed. They would be really the organizers of the company, the beginning of the company. I used the word "sponsors" as synonymous with organizers.

This Organization and Development Expense Prior to Organization is a percentage on other figures appearing in the exhibit. It is 5 per cent. on everything other than financing, franchise and going concern value—on all the rest of the figures as shown on page 2. Omissions and Contingencies is 5 per cent. of the item $15,113,366, on page 2 of Exhibit 283. I think that is in the record. That shows the cost reproducing plants and stations and gas holders. Organization and Development Expenses Prior to Construction include 5 per cent on everything excepting financing, franchise and going value.

The Engineering and General Contractor's Expense and Profit is 13 per cent of Equipment and Holders, Omissions and Contingencies, buildings and appurtenances, and mains. And the Interest During Construction, is interest on land two years at 8 per cent; interest on organization and development prior to construction for two years; and it is interest on equipment at gas plants; Omissions and Contingencies; buildings and appurtenances; mains; engineer-[fol. 1691] ing; general contractor's expense and profit; administrative, legal and miscellaneous general expense during construction, for a period of one-half of two years or one year. $5,092,494 is interest during construction. That is what that is made up of. The allowance for Administrative, Legal and Miscellaneous General Expense During Construction is 2½ per cent. on gas plant-equipment and holders; omissions and contingencies; buildings and appurtenances; mains; engineering and general contractor's expense and profit. On page 5 in my text under the heading "Organization and Development Expenses prior to Construction," are a number of items there and among them "Interest on Expenditures Incurred During this Period," the aggregate of which is $4,000,000. There are certain expenditures during the period of preliminary development that must be paid for and carried along and on which interest must be paid before the company is financed, and therefore the sum is interest on that $4,000,000 on expenditures

that have been made during the organization period, that are not included in subsequent interest on construction. One of these figures deals with a condition prior to the time construction begins. The other deals with a condition after construction begins, and before operation begins, but there is no specific period for the preliminary organization. That must be completed before construction begins. In estimating the cost of this imaginary project I have charged [fol. 1692] the cost of financing, $103,000,000, less certain items. I included the cost of obtaining this particular $4,000,000, among other things. I allowed an interest charge of 8 per cent, upon moneys that we were to obtain and included there an allowance of 8 per cent upon this $4,000,000, among other things. There is no duplication of interest charges. The allowance for Administrative Legal and Miscellaneous Expense During Construction is based in part on our other two allowances known as Omissions and Contingencies, and Engineering and General Contractor's Expense and Profit. In my Interest During Construction, I did not allow for the taxes that were paid during construction. The sponsors were the men who organize the project, not necessarily the men who organize the company, but the men who start the whole project. I did not assume any specific number as sponsors. This would cover such sponsors on a reasonable salary basis. A reasonable salary basis for sponsors would vary with the project. In this case I should say that the men that can see the vision of this organization, or foresee it, a reasonable salary would probably be $50,000 or more per annum, not that they would give all of their time to it. Such men as would visualize this would not give all of their time to it, it would not be necessary. I did not provide for any specific number when I arrived at my estimate. There would necessarily be more than one. It would be [fol. 1693] possibly at least three. I do not think they would draw any salary actually; they would expect to be reimbursed for the services when they turned it over to the stockholders. They will have offices, such rental as it would be necessary to pay, and travelling expenses. I have made no specific allowance for it. And such travelling expenses as would be necessary in looking up other

plants, looking around the country or around the world, even, to see what the latest conditions are in gas plants and building construction. I did not specifically provide here for a little trip around the world by the sponsors. I do not think there is enough in the statement, if they want to go. Though I think they might want to do that, there isn't enough in it to do it, to provide a trip around the world. The sponsors are supposed to in the first place, look over the field to see whether, on preliminary survey, it looks attractive. If it does, they will consult attorneys and see what is necessary in order to get the rights, franchises and so forth to do business, what legal obstructions, if any, there are, and what is necessary to overcome them. Then they will hire canvassers to make a preliminary canvass of the territory to see whether service is needed, and if so, whether it would in sufficient amount to make it pay. They will hire engineers who will make a study of the situation to determine the approximate cost of the [fol. 1694] enterprise of building the plant, getting it started, also advise as to the cost of rendering service, and all of this data will be assembled and it will be worked out financially to see whether the project as such will pay, that is, whether service can be sold at a price that will make the project profitable. Having done that, they will then take it up with financial people to see whether money can be raised. In general that is what the sponsors will do. I do not know about how many stenographers and clerks and other assistants they would need. Probably no two groups would have the same number. I did not provide any specific number of offices for the sponsors. This is five per cent. of the cost of the enterprise, omitting financing, going concern value and franchise, and no specific allowance was made for any item in it. I can not give any idea as to how much there would be ordinarily expended for office rent, travelling expenses, nor any other specific item in there, such as stenographers, clerks or other assistants. I provided no specific office. It would have to be provided for, but not specifically. The office might be here in Brooklyn or Manhattan, or might be in both, and it might be neither. It might be necessary to travel in order to interview underwriters, to examine systems, plants in

other places, examine the costs in other places and get information to instruct people who want to go into an enterprise similar to those which are operating elsewhere. They [fol. 1695] would go around and look at other gas plants, and advise themselves as to the plan of construction and the equipment that other companies are using. I have provided in the statement for the expenses of obtaining the charter, including the incorporation fee and the payment to the state on capital stock. That is all part of the thing. I did not know how much the incorporation fee would be. I can not tell how much they would pay to the state on the capital stock. That is based, I suppose, on the charges of New York State, for capital stock of New York State, based on the charges what ever they may be. I do not know what the charges are. It is a legislative Act.

As to the cost of the money, aspects of legal and enginering advice—I just explained at some length what the sponsors would do and what advice they would get. I referred to the advice to the sponsors that I have already described. As to other technical expenses, I refer to a gas company or corporation accountants and other people skilled in gas company management who would be consulted regarding the expense and methods of operating the departments. I have also made an allowance in this overhead item for the interest during the period on the expenses incurred during the period. I meant the period previous to the beginning of construction to be covered by that. On administrative, legal and miscellaneous general expenses, that class of items does not relate to the time sub- [fol. 1696] sequent to the construction period. They are during the construction period, and that includes the salaries and expenses of the executives and general officers, the auditors and bookkeepers and timekeepers and inspectors and the other employees of the company, all specified on page 8. This organization that was built up and provided for by the administrative, legal and miscellaneous expenses, was built up contemporaneously with construction. A company would not have any organization at all prior to the construction period; they must anticipate it somewhat. The sponsors would do nothing whatever in connection with construction. After the money is obtained and the company organized the sponsors may become

officers, but they won't act as sponsors after the money is obtained and construction begun. As soon as the construction is begun, the company naturally would have to organize a little in anticipation of construction because somebody would have to let the contract and do the negotiating, so that practically it would be slightly in advance. Aside from the general officers of the company, it would have to employ prior to the date of the construction an accounting department. I told about the organization and development expenses, under the administrative, legal and miscellaneous expenses during construction. As to what organ-
[fol. 1697] ization the company would have to have for the organization and development expenses prior to construction as distinct from the administrative and legal and miscellaneous general expenses—prior to construction it would not necessarily be any organization at all, it would be or might be and very probably would be just an association of men who have conceived this enterprise and are making a study of it. I do not think that a general corporate organization is necessary. It would have to have a president, vice-president, auditor and bookkeeper during construction, because prior to construction it is not my idea that they need necessarily be incorporated except I mean immediately as construction begins, almost simultaneously with construction, but my study is not predicated on a corporation even prior to construction. I misunderstood the question. During construction there should be a complete company organization with the necessary accountant and such inspectors and engineers as may be necessary to check up on the general contractor and sub-contractors and to secure the necessary permits for the running of street mains and the necessary legal expense regarding the ordinary operations of the company outside of damages, damages are cared for in the underlying costs. I mean by that damages to property in the construction, and they must have the accountant and bookkeepers so as to see that the company gets what it pays for and see that proper accounts are kept of expenditures.

[fol. 1698] As to what legal and court expenses were included in my allowance under administrative, legal and miscellaneous general expenses—in doing business, tearing up the streets and construction, there are always questions

coming up of liens or property damages which must be taken care of out of the construction expenses. Not the filing of liens but getting rid of liens when they are filed, and they are liable to be filed against construction enterprises when you are dealing with a lot of sub-contractors, some sub-contractor is liable to, and frequently does, welch and somebody then files a lien on the work. That is not because we don't pay him, it is because the sub-contractor has not paid his material men, and there are various questions coming up all the time which must be cared for by the legal advisors. Questions, as I say, of property damage; people who come along and run an automobile or wagon into your ditches; people will steal your property on the streets; they will get injunctions against types of construction—against holder construction, for instance. People would take steps to prevent us from constructing our holder; that is one of the things that arise. That would involve legal expense and the expense of trial, as to whether we would be permitted to erect a specific holder. I do not think they would be apt to do it on all, but it comes up in individual cases, in my experience. I don't know how many — the people would [fol. 1699] take steps to prevent us from constructing in this manner here.

I have made provisions for the printing of briefs, wherever printed, wherever printing was necessary. I have been more in touch with gas cases than other kinds of business, so naturally I would see more briefs. I did not have in mind the printing of briefs such as furnished in gas cases whatever briefs might be necessary that would arise in the preliminary work, not rate case briefs. The legal forms I had in mind, such as testimony in the cases that arise during the construction period continually with these gas companies. I mentioned some of them, such legal forms as would be needed in those cases—printed forms, or written forms, whatever would be necessary in the specific cases. I mean by that the drawing of the necessary papers. The word "Report" right prior to "etc.," is the reports in connection with the investigation of the conditions arising out of complaints and injunctions and liens and any other legal proceedings. "Etc." means anything of that same general nature; any other work that the counsel will do. By payment to referees or arbitrators for the settlement of dis-

puted questions, I meant they probably would not be always forced into Court, they might find some people who were willing to go before arbitrators or referees—either that or a Court referee, a trial before referees instead of before the Court. I have tried to include all the expenses [fol. 1700] which are ordinarily incurred. As to costs of suits for other causes than injury to persons and payments of special fees, I just explained already, the cost of injunction proceedings, lien proceedings, injury to property, settlement of questions as to street titles where people claimed we were laying our mains in private streets and any suits that arose from any cause whatever during the construction period other than on account of person- injury. Special fees means to whomever we had to pay special fees to. We might have to pay special fees for the privilege of going over a private street and special fees to special counsel. Counsel generally get a good deal of it, probably some of that, special fees for any purpose in connection with the general administration, including counsel. It might be some special engineering conference. The expenses of taking depositions means cases in courts where we had to take depositions usual expenses of that kind. I intended to cover both in the State or out of the State depositions. Where they are taken out of the State it means out of the State, and where they are taken in the State it means in the State. That is taking of testimony before a Notary or other legal officer who is entitled to take depositions—a lawyer. All construction and equipment items of a special and incidental nature not provided for under any other heading in this inventory might mean the rent, for [fol. 1701] instance, of special testing apparatus, or a special piece of construction apparatus to get over some unusual extraordinary situation which was not included elsewhere. The administrative officers and the legal department refers to some of the details that they must look after. They must look after the entire operation of the construction company. The details that I had in mind for the legal department to look after were the ones that I have spoken of, and I expected them to look after anything that was referred to them. The administrative officers would have to look after the management and organization and construction of the property. I mean a going organization.

I do not mean the preliminary organization, but the going organization. They have got a large organization to look after. They are spending eighty or ninety million dollars, which requires a very large organization and there are many things to look after. This expenditure does not include the organizing of the company into an operating concern. This is during construction. The development of satisfactory public relations requires the attention of the general officers and, so far as possible, of everybody in the organization during this period. The expense would be a part of this entire expense. To develop the satisfactory public relations in the expenditures that were incurred by reason of that—every member of the organization, so far [fol. 1702] as he could, should keep in touch with the people that he comes in contact with. I mean, he should be polite and careful and explain the attitude of the company and leave a good impression. The general officers of the company and the employees in the higher positions should keep in touch, as far as they can, with the people that they come in contact with and explain what the company is trying to do and try and gain the good will of the public and try and get the public in a receptive mood so that when the canvassers go around at a later date they may have a satisfactory hearing. As to the cost of it, it is a part of the entire amount and I have put in no specific figure for this. At this time during the construction period they come in contact with the public; they are constructing mains on every street in town. They would be in contact with the public a long time, and that is what I meant by "when they come in contact with the public they must create good feeling". I haven't figured any cost of any advertising compaign at all to create satisfactory public relations during this period. They probably would appear at public gatherings during this period to develop satisfactory public relations. During this same period an operating organization should be perfected. I have covered in this item expenditures for organizing an operating department. Nothing is done after the plant is completed. These officers will, out [fol. 1703] of these construction forces, select superintendents, and engineers and other operating employees and arrange that when the plant is completed they will go to certain assigned posts in order to start the operation of the

plants. That could come after the construction is completed. The administrative organization will discuss methods of advertising and canvassing and probably even select canvassers to be started out when the property is ready for operation, in order to build up the business. It will also probably prepare advertisements and prepare matter to extend the business as much as possible. The company organization—I mean by that the officers of the company, general auditor and accountants—would be probably used after the operation starts. The balance of the construction organization would have to be changed around materially to use it as an operating organization. The bookkeepers and employees can be used in the accounting organization, I should say. The stenographers could probably be used in the operating organization. The franchises were valued by me on taking the sum allowed in the Consolidated case, amounting to $7,781,000, and dividing that by the output in 1885 or 1884, at the time that the company was consolidated and organized, and in that way I arrived at the figure of two dollars a thousand, and applying that same figure to the Brooklyn Union Company I expressed the opinion that the franchises were worth $6,000,000. That was a check valuation. I valued it another [fol. 1704] way also, and I valued it by taking into consideration the difference between the value of all of the other properties in 1895 and the amount paid for the property, giving the franchise value the difference. Let me correct one statement there. It was the gas sales in the case of the Consolidated and the Brooklyn Union, not the send-out, in 1884. The sales of the Consolidated in 1884 which I used were about 3,890,000,000 cubic feet of gas. And in 1904, at the time of the trial of the Consolidated case,—I do not know what they had at that time. I may have known how much they had increased from 1884 down to the time of the trial of the Consolidated case, when the question of the allowance for the franchise first appeared and was passed upon by the courts—known the sales in 1904 at some time, but I do not remember them now. I really do not know if these $7,781,000 franchises and rights were entered on the books of the company. $7,781,000, as I understand it, was franchise. It may have been for

franchises and rights; I do not know the difference between franchises and rights, and franchises. I testified at some length on this, and I took the court decision in the case and read it over a great many times. I did not go to the record of the Consolidated case. I made no investigation to ascertain the significance of the word "rights" and what it comprised. I did not know that the Consolidated Company had a Ross Patent. I have seen the machine there, but I [fol. 1705] did not know that they had a patent—a mere incident. I was not aware of the fact that they owned the McKenzie Patent, and I never heard of the Root Patent, the Jones Patent or the Beales Patent. I was quite unaware that in the Consolidated case President Rume had testified that the patent rights were worth $2,000,000 or $2,500,000. I did not know what was included in the item comprising $7,781,000, aside from the fact that I thought it meant franchises, and showed that there was not anything much beyond franchises; that those rights were not valuable. I am familiar with those old properties and I know that those patents had no particular value. I was aware that the $7,781,000 was intended to cover every item except the tangible property owned by the company—the difference between the purchase price and the tangible property. I did not know there were any contracts of any value. I did not know what contracts the company had and which they considered as being covered by that item. They had certain street lighting contracts, but I do not think the company intended to penalize the customer by charging for a street lighting contract. I made the investigation as to the various items that comprise the $7,781,000 by studying the court's decision as to what was in it. I did not examine the books of the Consolidated Gas Company, and I used this only as a check upon a figure previously arrived at. I did [fol. 1706] not read the record in the Consolidated case. I have read some of the report of the Stevens Committee, which reported on these very same franchises which were owned by the Brooklyn Union Company. I do not know whether I have read it all. In looking up this question, I did not advise myself about the report of the Stevens Committee. I have seen some parts of the report. I was not aware that the Stevens Committee had reported upon these very franchises which I valued. In part I examined into

the question as to whether the grants made to the original companies applied only to special districts in the Borough of Brooklyn, because I knew that the grants were sold—the franchises were sold as between the companies. To that extent I knew that certain companies had, to some extent, certain districts. The Brooklyn Gas Company, I believe, had the entire city, and some of the other companies bought territory from the Brooklyn Company, and that was specific territory, so that they had only a certain district. I did not examine into the question as to whether one franchise overlapped the territory of another franchise or whether they were separate and distinct—not everything in the companies that bought and sold territory between each other. I examined some of them. I did not examine into the question whether the franchises were assignable or not; I knew certain of them were assigned. As to the [fol. 1707] value of a franchise being affected by its assignability, that, in my opinion, would depend upon the nature of a franchise. If the Company had a franchise for the entire territory, which it would be necessary to assign, I do not think it would be affected. If it was a part of a territory which, in the natural course of events, would be consolidated then I think it would be affected. Whether there is any difference between the value of an assignable franchise and the value of a non-assignable franchise for the same territory, would depend on the territory, and assuming the territories are the same territories that were covered by the franchises of the vendor companies taken over by the Brooklyn Union Company, as far as the Brooklyn franchise is concerned, which covered the entire City, I say "no." As far as any other franchises were concerned which covered a part of the City, I should say that they would have been more valuable if they had been assignable. I do not mean by that answer to infer that they were not assignable, because they had been assigned in most cases. I draw a distinction between a franchise for Brooklyn as a whole and a franchise for some smaller territory, because the logical end of these companies always is to consolidate under one big company. Now, if there is already one big company with a franchise for the entire territory, there is no occasion for assignment, but if they are not consolidated, [fol. 1708] there is a bar to consolidation which affects the

value. I have made no study of statutes relating to the consolidation which were in effect at the time of the consolidation of the Consolidated Company in 1884 and also the statutes which were in effect in 1895 when the Brooklyn Union was consolidated or purchased the properties of the vendor companies, and I made no assumption as to the status of the law relating to the capitalization of franchises, nor did I assume that they were the same in 1895 as existed in 1884, or that the law had been changed in some respects.

I may have been aware that the Consolidated Company was consolidated pursuant to an Act of the Legislature passed in 1884. I have forgotten at the moment.

[fol. 1709] I made no study of the statutes which were in effect in 1884 and in 1895 as to the capitalization of franchises. I have read the decision of the United States Supreme Court in the decision in the Consolidated case a number of times. I do not recollect that the United States Supreme Court stated that the valuation was provided for in the Act. I think I have read the decision of Judge Hough in the lower court in the same Consolidated Case. I do not recollect that Judge Hough stated in that opinion that there was no method of valuing franchises except by a consideration of the earnings. There isn't any item that I have in here that has not been included in cases of this kind, with the possible exception of financing. I do not remember at the moment whether the actual cost of financing has been included in a rate case. I do not remember. It may or may not have been. The other items, I know every one of the other items have been included in rate cases in this State, and I advised myself to ascertain whether they had been included or excluded by examining the various decisions. I have read one or two of the Bronx cases. I don't know whether it is the one that counsel described. There have been a number of Bronx cases, I think, before the Commission and courts. I have not read Judge Page's decision. I do not use the franchise to the extent that I [fol. 1710] have put it in. I have not made any deduction from this $3,050,000 for franchises for the benefit of the subsidiaries. I have already testified that I considered the franchise as worth $6,000,000 and have included it at $3,050,000. Any use for the benefit of the subsidiaries is use in excess of this $3,050,000, if there is any. I have allocated

no part of the sum, then, of $3,050,000 to the subsidiaries. I have allocated approximately Nine million dollars of capital working for the subsidiaries. In that nine million dollars there is no portion of the $3,050,000 which appears on my exhibit as franchise value of the Brooklyn Union. There is no part of that $6,000,000 which I state is the vaue of the franchises included in the sum of $9,000,000 which I have allocated to the subsidiaries. The Brooklyn Union does exercise, I think, its franchises in delivering gas to the subsidiaries the same as any other consumer. The value of these franchises was determined in 1895 when the company was not distributing gas in any material amount, if any, to any subsidiary company. The franchise has not been increased in value since that time, and there has been no distribution or prorating with any new business, and therefore there seems no reason to prorate it to an entire new line of business when the franchise has not been increased in value in my appraisal. It is the valuation that was put on the books in 1895, which I have [fol. 1711] taken without any change or any question. I testified it is worth at least $6,000,000, and I have got $3,050,000 here. I state that the company valued their franchises in 1895 at this figure which appears in my exhibit. They valued franchises that they had from this district to lay mains and to lay services, use the streets and public places, and the company valued that in 1895 in the sum of $3,050,000; so I understand from the books.

I reached my going concern value by taking $35 a meter for the 458,720 meters. The sum which I arrived at was $16,055,200. I mean by that that in my opinion a property similar to the Brooklyn Union Company would be worth more if the consumers were attached on June 1st, 1923, than it would if there were no consumers attached but the company was ready to deliver gas. I mean by that that in my opinion the purchaser of the property would pay $16,055,200 more for the property if the consumers were attached than he would if they were not attached, that is, consumers attached and running economically. The difference between the value of the property, in my opinion, with the business attached, and the value of the property without such business attached, is represented by the cost of annexing the business, and this I estimate at $16,055,200.

That is, it is my opinion that it would cost about $35 a meter to annex the consumers as of June 1st, 1923, and to pro- [fol. 1712] duce an economically going concern. I mean that if you start a plant that has just been constructed—I have been over all of this before—you first find that the plant itself is not properly organized; minor changes must be made in various places to make it operate economically. It is expensive to organize the operating staff. This expense will be shown in an excess cost of labor and in excess use of materials until the staff becomes skilled. In addition, there is the actual securing of the business itself through advertising, special concessions, canvassing and instruction of the actual users to make them useful consumers. I do not know how much it would cost to annex the business alone. It is all tied in together and all the operations must go together simultaneously, and it is difficult, if not impossible, to separate it. All of the operations would go on simultaneously and by the same organization. All of it would be an operating department. A new business department is an operating department. It all goes on together, and I could not give any opinion as to how much it would cost to annex the consumers as distinct from the cost of developing the organization into an economical form. I cannot separate one from the other. In my opinion, it would cost to annex a consumer on June 1st, 1923, all expenses, including the starting and making it efficient, would be $35. I could not say how much just the annexing of the consumer would cost. No two consumers would cost exactly the same. You would have to make material concessions to some; some of them would be very [fol. 1713] expensive. It would cost to annex a thousand consumers to a plant which is already to transact business on June 1st, 1923, probably anywhere from $20 to $30 apiece. I don't know how much it would cost to bring the manufacturing plant into an economic state of operation on June 1st, 1923. I could not tell offhand. During the first year's operation it would cost from ten to fifteen cents a thousand feet for all the gas made before they reached an economical operation of the plant. It would cost ten or fifteen cents a thousand feet to get the manufacturing plant organized—ten or fifteen cents a thousand feet for a year. I should say that would be another ten or fifteen cents per

thousand feet to weld the general organization of the company into an economic organization or whole. That is the bulk of the cost in this figure of $16,055,200—the actual cost of annexing the business. Annexing the business is the bulk of it. As I say, it is $20 to $30 a meter, which is a bulk of $35.

I assumed some of them had used and some of them would not have used. Average new territory—there isn't any new territory I am familiar with where there aren't some people that are using gas and some that are not using—I mean that have previously used gas and some that have not previously used gas. I assumed average conditions in new territory. They vary. Every new territory varies. I did not assume any exact averages. I did not take any percentage as to the percentage of consumers that were experienced in the use of gas. My thought was as I have stated, that it is like the development in new territories—[fol. 1714] suburban territories, which we are continuously making and upon which this was based; that many of the people in those suburban territories have used gas in other places and are anxious to get it; others have not used it. I never made a census as to the number of consumers in a new territory that have had experience in using gas previously and I cannot tell the percentage. All I know is that in a given territory of new consumers, you will find some of them that have used gas before. I never made any investigation as to that. The fact that a large or small percentage of people had had prior experience in using gas would not affect the cost of annexing the consumers. That is, you could get a person who has never used gas at all—you could get him to use gas at practically the same expense as you could a person who had used gas prior. I don't know that, that would depend somewhat on whether the use of the gas prior had been a successful use or not. As to the density of the population in the territory I assumed whatever density exists in Brooklyn as of today.

On June 1st, 1923, I assumed the same number of people living in the vicinity that actually lived there. The population of the territory is around two millions. I do not know; it may be a million and a half; it may be two and

a half million. It is around two millions, though. The Brooklyn Union—maybe we do not understand each other. The Brooklyn Union to its own consumers; not the territory [fol. 1715] supplied by the Brooklyn Union to its subsidiaries. I have not estimated the going concern value for the subsidiaries, too, in this figure. I have not made any estimate at all of the density of the territory of the subsidiaries, or have not paid any attention to the cost of annexing the subsidiaries business. I mean, in this figure. Then when I spoke about the density of the territory, the cost of annexing the business, depends upon the cost of the substitutes for gas. It might, if there was a great variation in cost; but there isn't such a variation that it is very material. I assumed in determining cost of annexing the business current costs as to the price of substitutes that were available for use. The stove wood was around $20 or $25 a cord. If there were no gas, they would be using coal or oil, gasoline, acetylene; possibly some wood. Some of them might be using electricity, some of them do use electricity now. I assumed coal about $15 a ton and kerosene about 20 cents a gallon. I took those factors into consideration when I was estimating the cost of annexing the business. In general, I took them into consideration.

The cost of annexing the business would not be a great deal more if people were using a low cost substitute, than it would be if they were using a high cost substitute because gas would be correspondingly lower. The prices of the materials that the people use, is the controlling price—has an influence in the cost of gas. The variation in price of [fol. 1716] fuel varies the cost of gas, and so there is always some natural relation between the cost of these kitchen fuels and the cost for gas. It would cost more to annex and convince a consumer that he should have gas if he was at the moment utilizing some substitute which would be cheaper to use than gas. The cost of annexing the business also depends to some extent upon the fact as to whether the substitutes can be easily obtained or not, whether it is easy to obtain or whether it is more difficult to obtain; I think the price would reflect that. It was easy to obtain coal on June 1st 1923—coal and wood. They were plentiful and easy to obtain. I considered that the

same amount of people were living here in this locality, but instead of using gas they were using some substitute. I do not assume that the market would be damaged by lack of gas. I did not change the market prices of materials on this assumption. I took the market prices of materials, and I took the conditions of delivery that anybody could get what they required for immediate needs as estimated. I did not assume that the market would be completely upset by failure to have gas. The cost of gas I assumed to be about $1.25 to $1.50. I was figuring that gas would cost the consumer about from $1.25 to $1.50 a thousand. I would be a little more costly to influence the consumers, at $2 for gas I think it probably would make a difference. There is a greater spread between that and the coal price than there is at $1.50. If other people can- [fol. 1717] vassed, you would probably get less of them. You might not have to use greater persuasion than this, but instead of getting three customers out of ten visited in a day, you might not get but two; so that the cost would be proportionately increased. I assumed 535 to 600 B. t. u. gas. I assumed that the company would stand ready to deliver that character of gas at the price of $1.25 to $1.50. I assumed the consumers did not have gas appliances if they did not have gas. Quite a large number had appliances but many of them have been sold by the company. I assumed that the services were not laid until the orders were received for gas, and that no services were laid during this period of building up the business. I did not have in mind any particular territory where the consumers would be attached first. My opinion is they would be scattered all through the district. It would be policy for the company in constructing a gas plant to first extend the mains at its most thickly populated territory, but then there would be a whole different problem from the this method of reproduction. Then it would grow up over a long number of years instead of building, everything—developing immediately. That would be a whole different picture from the one I have painted. If I were to build a gas plant here in the Borough of Brooklyn it would be my aim to annex the greatest amount of consumers in the shortest possible time and I would naturally make extensions into thickly

populated sections, assuming that the mains did not go [fol. 1718] along simultaneously with the construction of the plant.

The education of the first group is often much more difficult than it is of the last group. People follow their leaders very often, despite the fact that they have had prior experience in using gas. It might be that regardless of the prior experience they would very likely be perfectly satisfied with what they were doing and not want to change. I think even though they had had prior experience in the use of gas, it would still cost quite a little to influence them to take it again. When they move off gas mains and get themselves fixed up for coal or electricity, it is very difficult at times to get them straightened out again—get them to give it up. I say that when a gas man moves off the line of the gas mains and gets himself equipped with his coal or electricity or kerosene outfits, it is often very difficult to get him back with his range and water heater and iron and other devices in full, because of the natural indisposition of a man to change when he is satisfied with what he is doing. People do not like to change. Also the expense involved; and he does not like to incur the expense and change his habits. I had a very good cook, one of the best ever had, threatened to leave me because I told her I was going to take out the coal range and put in a gas range. She said she would not cook on one of those things.

As to the cost to advertise the advantages of using gas it would vary on the disposition of your management. [fol. 1719] Some might spend more in advertising and less in canvassing and others more in canvassing and less in advertising. They are all tied up together. The canvassing and advertising and circularizing are all tied together. No two companies would spend the same amount. I made no specific assumption on that, as separated from the other expenses. I cannot give any idea as to how much that amount would be separated from the other. There is no way of grading up the lump sum. There would be—go back to the books and analyze them; but I do not carry them in my head. Simply use my experience. I could state in some cases it has been very high—the cost of special concessions of various kinds necessary to secure the business—more than the business was actually worth after I got it. I did

not assume any specific amount on the average. It was part of the expense. If we spent enough in canvassing, we might not need any special concessions, but is cheaper to make certain special concessions and cut down the canvassing to some extent. By "Special Concessions" I mean giving people appliances, giving them a special type of appliances, giving them to church gatherings and public gatherings of various kinds, and having somebody demonstrate them and picking out prominent people in neighborhoods, and giving them appliances—people that will tell their friends about them. To teach the consumers just how to use the gas economically, that amounts to quite a considerable amount in a new territory. I have not put it into dollars. In fact, I knew one company that was wrecked once because they did not teach them that. Whether it is [fol. 1720] difficult to teach a person to use gas depends a good deal on their intelligence. Some of them are pretty difficult; some of them you can never teach to use it economically. I have reference to San Juan, Porto Rico. The company made no effort to teach the San Juan population and it wrecked the company. I don't know what element of cost in going concern would be the largest. I have stated, I think, about ten elements. They are all so inter-tied that cutting down on one would put up the other. If you were going to develop the business rapidly, you could cut down on one and put up the other, and perhaps come to the same result; more canvassing and cut down advertising; more circularizing and cut down canvassing; more advertising and cut down canvassing; more special concessions and cut down all three of the others. It would be a matter of judgment of the persons who are developing. I did not assume anyone to be the most costly. The way I handle the business it was a special concession that was the most costly. I used to pay $10 for every range sold as commission, and set it free. I paid $10 to the person who sold it and set it free. I found that that was—it actually cost me under those conditions about $20 a new customer, and in addition to paying—if I had a complete new customer I paid a commission on the meter, and in that way I felt that I was making the best bargain. That was about twenty years ago, in Baltimore. I said I paid a commission of $10 to each range sold [fol. 1721] and I set the range free. I paid the commission

to an appliance company organized for the purpose of getting out the appliances. If somebody came in and wanted to obtain gas we took the order and set the meter, if they wanted to obtain gas, and then we paid no commission on the meter. That appliance company was not a subsidiary. It was not related to the gas company in any way. I have made no study of the books of the company to ascertain the cost of annexation of business. I made no study of the sum which was spent by the vendor companies in the annexation of any of its business. I made no study of the books of the company for the purpose of ascertaining whether during the early period of the company they had failed to make a fair return on the fair value of their property. I don't know that there was a deficit or anything about it. My opinion is not based on past deficits. My opinion is based upon what it would cost to annex the business and make it an efficient going concern, irrespective of the actual expenditure incurred by the company for that same service, that is for annexation of the business of the company without considering those in any way, and I started with the assumption that this community in Brooklyn as of June 1st, 1923 had no gas and I proceeded to form an opinion upon what it would cost to accumulate and install such a gas plant as they now have. Then I started to form an opinion as to what it would cost to acquire the patronage. They had 458,720 meters and sold during 1923—regardless [fol. 1722] of what they sold during the balance of the year. I took that number of meters and multiplied it by $35 and thus arrived at my estimate of $16,000,000. They sold 15,300,000,000 feet approximately to their own customers in Brooklyn. I assumed that the conditions on June 1st, 1923 were those familiar to all of us, other than that we had to assume there would be an absence of gas, but other conditions prevailed as are familiar to us which means that I contemplated that the science had advanced to the point that we are familiar with in the way of electricity and any of the devices to supply the community that existed at that time and people were educated to the use of gas to the same extent that they are. To the same extent that an average new territory is educated, the average new suburban territory made up largely of city dwellers. That would be

different from the education of the people of Brooklyn, probably to some extent different.

I never knew of a community of the size of Brooklyn as it existed on June 1st, 1923 that had no gas plants. This is predicated on my experience in extensions and on my experience in partially developed communities of—I assumed a condition of affairs which you recognized as without precedent. I did not go so far as assuming that every person that is now using it was thoroughly familiar with it. I predicated my assumption entirely on partially developed territory such as we need when we develop substantial size suburban territory and partially on my experience at Baltimore where I went in with a very undeveloped terri- [fol. 1723] tory and developed it intensively. In these suburban territories to which I referred I included in my assumption that they were supplied with electric current. Electric current almost invariably comes ahead of gas, almost invariably, because the cost of the extensions is very much less than gas and I assumed that there would be the same speed in the growth of popularity in the use of gas in such a community as the Borough of Brooklyn as it existed on June 1st, 1923 as I have found in my experience in these suburban territories and that per thousand consumers it would cost just about as much to develop a demand for gas in the community of Brooklyn as it would cost in such a sparsely settled district as I refer to as suburban. In the suburban districts they do not make any attempt to develop it all at once, they just let it grow, and if Brooklyn were simply allowed to gro- into the use of gas as it grows in the suburban territories, this business would not grow up; in twenty years, and therefore you would have carrying charges and other expenses against you which would greatly exceed this $35 but I have assumed that you would develop the whole territory within a comparatively short time. I have assumed you would do it within a year or two and have not put any material carrying charges into this development, but I would assume you would do it within a year or two, and that would save any carrying charges and other expenses, and as against that it would increase the expense of canvassing, advertising [fol. 1724] and special concessions to get your territory built up and developed. That year or two would not be

the same identical year or two that you have testified would be consumed in laying out and installing the plant because this development must start after you finish your plant. There is no use in doing much canvassing in advance because you have to go all over it again after you are ready to supply service. I lay my mains no matter whether there is a demand or not. I would not try to ascertain whether it was more desirable to lay the main in this street than in that, dependent upon the amount of meters you could immediately contract for; that would not be a factor. This appraisal is made on the assumption that the mains would be laid entirely and then go out and get connections with them as rapidly as possible.

The Master: You have no experience to guide you, have you?

The Witness: Yes.

The Master: In such a community?

The Witness: Well, let's take the Baltimore situation.

Q. In June, 1923, what was the population of Brooklyn?
A. Oh, I haven't anything that size.

The Master: What was the population of Brooklyn approximately?

The Witness: The biggest city I know anywhere——

The Master: What was the population of Brooklyn approximately on June 1st, 1923.

The Witness: I think a million and a half or two million, [fol. 1725] the territory covered by this company.

The Master: What was the territory of Brooklyn in square miles approximately on June 1st, 1923.

The Witness: I don't know.

The Master: You have no experience, have you, either you or your associate engineers or profession generally have no experience back of them of such a condition, to use your own language, as you have painted in this picture.

The Witness: The nearest to it was a city of a million people which never had a gas plant, and that is Osaki, Japan, a plant built by my brother.

The Master: Where?

The Witness: Osaki. That is the nearest thing. Of course they are a different class of people and none of

them had ever seen a gas, and there is quite a difference in the wealth.

The Master: You would not regard that as a guide, would you?

The Witness: No. What guides me is the actual amount we spent in American cities to intensely build up the business, the business being there already but just to increase it, and that is my guide, and that is what I base all of this estimate on. It often happens, and has in the experience of this company where people demand gas and even go into the courts to force the company to extend their mains to their particular locality. I think that has been done. I don't know that the company has some such action as that pending by its consumers.

[fol. 1726] The Master: Colonel, tell me is it your opinion that if the Borough of Brooklyn on June 1st, 1923, had no gas plant and that the cummunities generally throughout the State of New York and neighboring states, and the United States were familiar with the use of gas, as you know they have been on June 1st, 1923, that it would have been necessary to hold public meetings, subsidize corporations selling gas appliances, advertise, employ canvassers and demonstrate the use of gas appliances in order to instill in the community of Brooklyn a demand for the use of gas? Don't you think that on the picture that you have painted Brooklyn without gas, the community generally all around having gas, the uses of gas being known, its conveniences, it advantages and disadvantages being generally known in the community, that the necessity for this acceleration education and solicitation would have been reduced to a minimum?

The Witness: Within a limited extent I think probably that you would get an output of four billion, or five billion, but to get it up to the 15,300,000,000 in a short time, I think that effort would be necessary. I did not testify that an old plant would need as much or less repairs than a new plant—I stated the opposite. Many people would want ranges, they would not want them all——

The Master: Let me see what your opinion then is, that is how many consumers would immediately avail themselves of this opportunity? You expressed it in billions. That doesn't mean as much to me as meters.

The Witness: Well, I think probably——

Mr. Cummings: One-fifth of the business?

[fol. 1727] The Witness: Probably 200,000 or 300,000 meters would go in very quickly, with small consumption, though, per meter.

The Master: That would be about half the number of meters in actual service on this date, June 1st, 1923.

The Witness: Yes, but not with the same consumption as those meters on June 1st. I think those meters would go in for an individual range or some individual appliance. The backbone of the business today is to a large extent the cooking. Then comes along, which is a very valuable adjunct, the heating of hot water. A very large amount of gas is used for that purpose. Then further is a certain amount of house heating, then the industrial work. Now you can often get a meter put in for one of those purposes, but to get the house on a large consumption takes an effort and it is the effort to build up the consumption, not only to get the meters in but to build up the conumption per meter.

The Master: Now, after all is said and done, Colonel, isn't it fair to say that no one has ever had this experience, much less yourself, and there isn't anybody living that knows how fast meters would come in without soliciting, isn't that fair? Assuming the picture that you have painted June 1st, 1923, who is there in all this world that is competent to express an opinion, without precedent to guide, without any such extension ever happened in any community, who is in a position to say how rapidly these meters would come along without intensive advertisement? Isn't [fol. 1728] it a fair thing to say that it is quite impossible to form a reliable opinion because there is nothing to guide us?

The Witness: No, sir. I think it is very fairly comparable to my Baltimore experience.

Very fairly, or to experience in the suburban development if an attempt is made to develop it intensively, and I am reasoning from smaller developments to the larger developments. Assuming tomorrow morning the gas company should advertise that they would stand ready to deliver gas to its consumers, assuming that the consumers have had the same education to the use of gas that they

now have, they are not using it but tomorrow morning they advertise that they will deliver gas to the consumers and assuming that those consumers have had the same education and familiarity with the use of gas which they had on June 1st, 1923. For a part of their existing outfits they would have a great many applications. I think they would have very few applications for the complete outfits. I made no study of the financial history either of the vendor companies or of this particular company. I made an allocation of the property between the parent company and the subsidiary companies and in that allocation I followed the same allocation of Mr. Blanchfield. The Brooklyn Union Gas Company utilizes a certain portion of its plant in selling gas to the city and the price of gas is regulated by a separate statute, separate and distinct.

[fol. 1729] If you put the old plant in the condition in which it was when new, the upkeep will be the same; if you just do your painting and your pointing and ordinary repairs as it becomes necessary, it will cost more after it gets older than it would in the first year or two. Whether there would be a different in upkeep depends upon what you mean by needs repair. If a piece of apparatus is painted every three years and it has not been painted for a year, I do not consider it needs repair, but it will be painted at the end of another two years, so that that would come in at the end of two years instead of at the end of three years if the plant had been new. There is some difference, not very material, but there is some difference in the upkeep between an old plant well-maintained and a new plant. A new plant would need many repairs during the first three or four years. Water gas machines, for instance, needs to be rechecked about five or six times a year, and boiler furnaces have to be repaired many times a year, you replace a great many grates, and the running machinery needs to be continually repaired. I did not testify that an old plant would need as much or less repairs than a new plant. I stated the opposite. An old plant would need some more repairs — an absolutely new plant, always assuming that the old plant had not been completely overhauled and put in the condition in which it was when new. You have to re-checker both machines alike, irrespective of their age. We re-checker a

machine every thousand hours—a thousand or twelve or fifteen hundred hours, irrespective of whether it is a new [fol. 1730] machine or an old machine, or irrespective of how old it is. When I made an estimate to put the plant in a condition as good as new, good as new for all purposes, is what I meant. For sale, if you want to sell it. It is my opinion that a purchaser would pay just as much for a plant in good condition, despite the fact that it is an old plant, as he would if it was a new plant. In the condition in which it was when new, just the same, and pay more, probably. He would probably pay more because the old plant that has been operated has been organized and the new plant has not.

I am speaking about what people I have met in my experience would do and what I would do. I know of the sale of utilities. For example, the Consolidated Gas Company of Baltimore, the New York and Mutual Gas Company. The Consolidated Gas Company of Baltimore went into the hand of—twice in my experience, through a complete sale, a complete new control. The Hyattsville Gas Company went through a complete new control. The LaClede Gas Company was recently sold. The LaClede Gas Company of St. Louis. At the moment I cannot think of any others. I am sure I know of more. The East River Gas Company was purchased by Mr. Emerson MacMillan, some time ago. The New York Mutual was recently purchased by the Consolidated Gas Company of New York and I made the valuation upon which they purchased it. I think it is within two years, 1922 or 1923, I think, and the Bronx Gas & Elec- [fol. 1731] tric Company was sold, in a purchase by the Consolidated Gas Company. I do not recall any more. The Queensborough was recently sold. G. L. Phillips & Company purchased that. Those are the ones that I recall and that Long Branch Company, the Consolidated Gas Company of New Jersey was recently sold. In the New York & Mutual it was the sale of the physical property. In the others my impression is that it was a sale of the stock. I really don't know. The sale of the stock would carry with it all of the properties.

It takes an average period of twenty days from the time the gas is furnished until it is entered on the company's ledgers. In addition to that it is some time before they

are paid. What I meant to cover there is the gas furnished but not billed. It does not show on the company's books at all. I allow a period of time between the furnishing of the gas and the receipt of the money and that lapse of time required in my opinion, the use of some working capital, to carry the account along. It would require less working capital if the bills were paid in advance. To whatever extent the bills were paid in advance of the consumption, to that extent in my opinion the need of working capital would be reduced. I am not familiar with the fact that in this particular corporation bills to the amount of a million or a million seven hundred thousand dollars are paid in advance. These are deposits. These consumers' deposits draw interest and the company must earn the interest on those deposits. In order to pay it, and they are not bills paid in advance; those are amounts put up to guarantee the ac- [fol. 1732] count, and the interest must be paid on that amount, and if the interest is paid on that amount, it must be earned. I have taken into consideration that condition of affairs that you have just described in estimating the amount of working capital that is necessary to cover the item of time elapsing between the consumption of the gas and the receipt of the money of the company. I made no allowance because the company must have the use of that working capital in order to earn interest on it. If that is denied, they cannot earn interest to pay.

I incorporated in my exhibit or aim to all of the expenditures that were made by the company itself in repairs, in so far as the expenditures were on repairs that were needed to put the property in condition as good as new on the 1st of June. I completed this exhibit a few weeks ago (Exhibit 284) and I examined carefully, the amount expended by the Brooklyn Union Gas Company in repairing its various works and structures. I examined the books and got the expenditures as nearly as I could that related to June 1st, to conditions existing June 1st. I have got nothing relating to buildings. This does not in any way relate to buildings. If looking at my notes of the conditions existing on June 1st, that expenditures related to a condition existing as of that time, I would pay attention to it, but if it is an expenditure for something that had accrued since June 1st, I would pay no attention to it. I do not remem-

[fol. 1733] ber what the expenditures were in those conditions which had accrued subsequent to June 1st, 1923. I was only interested in the conditions as of June 1st. I have no house repairs on any of my exhibits. No building repairs on my exhibit anywhere.

On page 4 of that same exhibit, I have there for the cost of a new generator for the Mayer Twin Set No. 1, $9,355.20. Without remembering the exact figures, I do not know that more than this amount was spent indirectly in connection with this work, but not directly in replacing the generator. I do not recollect what the additional expenditure was for; I was not interested in anything beyond the replacing of the generator itself. I did not examine into the reason why the additional expenditure was made, only sufficiently to satisfy myself that it was not to correct any conditions that existed on the 1st of June. That is, it did not involve any expense to put the plant in the condition in which it was when new as of the 1st of June. It was not an expenditure for a repair, not in the ordinary sense. Part of it may have been a replacement, and I think probably some of it was replacement, but not an ordinary repair. I have forgotten the form of the authorization. That would include whatever replacement parts would be necessary to give the machine additional capacity. I think it was during the month of February or March—I am not quite sure which month it was, that I examined the expenditures as actually made by the company and checked them with the condition which existed on June 1st, 1923.

[fol. 1734] I testified in the prior Consolidated case, before Special Master Gilbert and I testified there that in my opinion the plant was well maintained and operating efficiently and I likewise testified in the New York & Queens case before Special Master Gilbert, and in that case I testified that the plant was well maintained and operating efficiently, and I also testified in the Standard Gas Light Company case, and the Central Union Company, the Bronx Company, and the East River Company. I do not remember whether I did or not. I testified in the Kings County Lighting Company case before Justice Greenbaum. I testified in that case that the plant was well-maintained and operating efficiently. Then I testified before Special Master Auchincloss, that the plant was well-maintained and op-

erating efficiently, and I testified before Special Master Hoff in the recent Kings County Lighting Company case that the plant was well-maintained and operating efficiently and I testified in the Bronx case before Referee Williams that the plant was well-maintained and operating efficiently and also before Special Master Graham in the recent Bronx case to the same effect. I testified before Judge Sewell in the New York & Richmond case that the plant was well-maintained and operating efficiently. I testified in that case. I do not remember just whether I testified on that particular point. I do not know whether I have covered the complete list or not. I do not remember at the moment any [fol. 1735] others than those mentioned.

I have stated that I have not the operations by months. I did not weigh any coal, I did not measure any oil or measure any tar; and how much they made that way—how much tar they made, how much coal they used that day, how much oil they used the day I was there, I have not a remote idea. I have taken the operating results of the Brooklyn Union system. The figures were furnished to me so that I could study them with the idea of ascertaining how much it cost. To study the costs, see whether they were reasonable or unreasonable. I devoted to the study of the figures of the cost of operations a sufficient time to satisfy myself that they were reasonable—about two or three hours. There may have been some minor differences at the plants. In some cases coke was being used, and in some cases coal was being used, and they all required different methods. In some cases a machine may be a little dirtier than in another case. That requires different handling. In some cases the coal is a little finer than it is in another case. That requires different handling. The methods change in minor details from hour to hour, from day to day, from week to week, always a difference in methods. I have just stated that I did not weigh any coal used in any plant. The coal consumption I have for the system. I do not remember at the moment which used the most coal, but I take it that the Equity did. I do not know which one used the most boiler fuel per thousand cubic foot, the conditions [fol. 1736] were different. I have stated that I did not weigh a pound of coal or measure a gallon of oil. I do not know exactly what was being used when I was there. I

do not know what percentage of tar they were recovering at the different plants. Ordinarily, it depends upon various conditions—the qualities of oil, all sorts of conditions. There is no fixed amount which they ought to recover. I did not look at the gas oil for the purpose of seeing whether the oil that they were using was suitable oil for them to use. The results showed it was; I did not have to look at it. I did not know what the results were until a month or two ago. At the time I looked at the plants I did not know how much oil they were using per thousand cubic feet or how much coal they were using or how much boiler fuel they were using. I cannot testify any more emphatically that I do not know what the individual plants were doing. I have stated that I will state it as often as you like. As a system it was efficiently operated. If the individual plants were operating inefficiently, the system would not be efficient. I do not know that any was operating more efficiently than the others, considering the design of the plants. Not having the exact results of each plant and not having the exact capital invested in each plant, and not having made a study of it, I cannot say whether one plant is slightly more efficient than another or not considering the entire cost including capital. I have the cost of each plant [fol. 1737] but I have never applied the capital to the gas made in the individual plants. They were making something like 580 or 590 gas when I was there. I did not measure it, I just took the statement of the superintendent.

In considering the question as to whether the plants were operating efficiently I stated that I had examined into and familiarized myself with the operation and maintenance not only of the plaintiff's plant, but likewise had examined into the corresponding departments of each of the other companies manufacturing and distributing carburetted water-gas in the City of New York, not each individually, but groups of the other companies. The Consolidated Gas Company and the entire system gas companies, that is the Consolidated Gas Company with its own plants, and the entire system gas companies—the Consolidated and associate companies. I am familiar also with the costs of operation of the New York & Queens Gas Company. I considered the cost of operation in the Kings Counting Lighting Company's plant and I had those facts, the facts

in that case before me, when I arrived at my conclusion in this case. The cost of manufacture in the various gas plants throughout the Metropolitan district depends upon the cost of materials and the cost of labor, and the management. The two largest items in the cost of production are the cost of generator fuel and oil. The cost for generator house labor or for manufacturing labor—we will put it that way—is not similar in each company, that is, where the [fol. 1738] company manufactures practically the same amount of gas. Where you can spend a lot for labor-saving machinery you can cut down the cost of labor. There is considerable variation between the companies. I do not know which gas plant now in the Metropolitan District the labor cost for that item would be higher in. I have with me only three or four sets of figures—I have four sets of figures. I have the Kings County, the Consolidated, the Consolidated Group and the Brooklyn Union. I can make a comparison here if you want me to. I have the four figures. I can compare them and tell you which is the highest.

Labor and material are the costs which enter into the costs of distribution largely. Labor element is the larger of the two. The transmission and distribution expenses under the system of accounts, does not include commercial labor. The costs of distribution are made up of a large number of items, the bulk of which is for labor. There might be; depending upon varying conditions a wide variance in the costs of labor between various companies in the Metropolitan District, in so far as the cost of distribution is concerned. The amount of work being done in the distribution department each year as of a particular company and a particular time would vary. They pay pretty generally the same rate of wages. I do not think there is any wide variation there. Taking the cost of distribution alone, with respect to a small company like, say, the New York & Richmond, or the Bronx, it might not cost more per thousand to deliver that gas to the consumers of such com- [fol. 1739] panies than it would to deliver it to the consumers of much larger companies, like the Brooklyn Union. It would depend a good deal on how their accounts were kept. There is a wide variation in the method of keeping accounts. A company that is active in setting meters, would

have a larger distribution expense than one whose business is more or less inactive. It would depend upon local conditions, therefore, whether it cost a small company we will say, like the New York & Richmond more or less to deliver their gas per thousand cubic feet, than it does one of the larger companies like the Brooklyn Union or the Consolidated would depend on how the accounts are kept. It would generally cost them more, but their accounts might show less, because it might go into some other account than transmission and distribution. In other words, the general commercial men might do work in the Transmission and Distributions and it would be charged into some other Department. If they kept their accounts according to the Public Service Commission rules, it would cost the small company more, but the books will not necessarily show it. I have not examined the books of all the companies. Just cost of delivery alone, that gets to be a question of accounting. There is a wide latitude as to the charge of storeroom expenses and other expenses as between construction and operation, and if the accounts were kept the same, then it would cost, in my opinion, the Kings County Lighting Company more than the Brooklyn Union. If the accounts are kept differently, then it is a question of [fol. 1740] how the accounts are kept. On account of the smaller amount delivered, if the accounts are kept the same it would cost them more per thousand cubic feet to deliver. I have not examined the books to know whether they are kept the same or not but I have talked with the officers of the company. I have a very good idea as to them. They are all kept according to the rules of the Public Service Commission, but which gives them very wide latitude, and the Brooklyn Union and Kings County accounts are not kept just the same way. I have been told so by the officers of the company. I have not looked into it. I have not examined the books. I do not recall whether it cost more to deliver a thousand cubic feet of gas in 1918 or 1919 or 1920 than it does at the present time, or is the cost of the delivery of the gas decreasing. I made no study of any of the findings of the Court in reference to the costs of distribution or manufacture in forming your opinion. I paid no attention whatever to that. I did not have before me the cost of production or distribution of the company

in any other years aside from these two years. I had before me the exhibit showing the cost of production and distribution in the Kings County Company. Their cost of production might be different because of the cost of the materials. There would be no material difference in the cost per unit of materials, but there would be in the consumption of materials for the different kinds of gas they make.

[fol. 1741] They were making about 540 or 545 B. t. u. gas at the works. This company was making 590 to 600, at the works, and there was some difference in the cost of the materials, too, per unit. It is measured at the works, and also at the consumers' meters. It is tested at the works. I suppose it is tested elsewhere also. I know it is tested at the works and they were making something like 540, 545. I am relying upon statements given me by the president of the company. They ought to need more oil, in order to make 590 or 600 B. t. u. than they would in order to make 540, about six or seven tenths of a gallon more they need to make the 590 or 600 at the works. About 3.6 to 3.75 gallons. To make 540 at the works they required 2.83 gallons. That is the average in 1923. The Kings County Gas is also tested at a mile from the works. I assume that is the law; but I do not remember where it is tested. I am not sure whether it was at the works or a mile from it, but they were testing at the works and they gave me the B. t. u.'s. All this is a matter of record and you can get it without depending on my memory. It is all of record in that case. I know the Brooklyn Union runs 60 to 70 B. t. u.'s above Kings County, but I do not remember the exact figure. It is 60 to 70 below Brooklyn. I think the Kings County is 540. That is the best of my recollection, somewhere around 535 to 540 or 545. The Brooklyn Union runs 590 to 600, as I have already testified. It does not cost any more to distribute gas of 590 or 600 B. t. u. content than it does to distribute where it has 540 B. t. u. per thousand feet of gas.

[fol. 1742] (Defendant's Exhibit No. 59 received.)

Exhibit No. 59 was prepared by Kings County Lighting Company. I do not know that it was an exhibit. It was prepared by them and handed to me. I do not know that it was an exhibit. I may have been asked a similar question

regarding the maintenance and the efficiency of operation in the Kings County Lighting Company case before Special Master Hoff. I do not remember. I have had this in my possession for two or three months and it was given to me by the company and I was told then that it was their cost of operations for the year 1923. To the best of my recollection, Mr. Bucher—either he or Mr. Gonnoud gave me the information. Mr. Bucher is the vice-president and Mr. Gonnoud is the auditor. One of the two gave it to me. They said when they gave it to me that this was the operating expenses of the company during 1923—I was then engaged in preparation of the rate case—preparation of an appraisal of the company's property.

I have not made any allowance for decrease in worth of the particular apparatus by reason of the fact that it might at some time in the near future be displaced by reason of inadequacy (Exhibit No. 284). I have not made any allowance in any of my exhibits for that element and that would also be true of any decrease in worth due to any progress in the art and obsolescence of the particular apparatus that the company now has in use, nor have I added anything on [fol. 1743] the chance that a more expensive piece of apparatus might be substituted. Certain portions of the machinery and equipment which I found in existence on June 1st, 1923 have been withdrawn since that time.

Referring to page 434 of Exhibit No. 283, the first item, Connellsvile exhauster, 103 cubic feet per revolution, directly connected to the Buckeye engine, I have not learned that that exhauster and that steam engine have been withdrawn since June 1st, 1923. I have no recollection of it. I do not say it is not true, but I do not know whether it is shown or not of my knowledge. I did not make any examination into the question of the amount of property that has been withdrawn since I made up my exhibit. I understand that will be made up and shown here. That is my understanding, that it will be made up and will be shown here—the additions and the withdrawals at these prices and the various items of property withdrawn. My understanding is that they would be made up and withdrawn at the price at which they were put in my appraisal.

The total of my so-called overhead items Omissions and Contingencies $755,668, Engineering and General Contractor's Expense and Profit amounting to $5,071,951, Adminis-

trative Legal and Miscellaneous General Expenses During Construction amounting to $1,199,097, Interest During Construction amounting to $4,092,494, Taxes During Construction amounting to $497,565, Organization and Development Prior to Construction amounting to $4,000,000 and Cost of [fol. 1744] Financing amounting to $4,200,000—the total of those items amounting to $21,206,775 is ordinarily termed Undistributed Structural costs. They are also termed overhead items. The percentage of my overhead items, amounting to $21,206,775 to the cost of the structures which is $52,796,062 is about 40 per cent. Those overheads are related to land and working capital as well as the other items. I have in there land $3,451,600. The total of all of the structures including the land is $56,247,662. I have made a study of the business methods that are used or the amount of business that is done in the sale of gas appliances by some of the competitors of the gas company. I talked to them about it and have seen some of their results of their selling. I do not know anything about any outside concerns other than the one I did business with in Baltimore many years ago. I am not familiar with the various local concerns that sell gas appliances in competition with the gas company, as for example, the department stores. I am not sufficiently familiar with their method of conducting business to know whether they maintain a department such as that at a loss. I am not familiar with business conditions prevailing in the department stores generally to know whether it is their practice to maintain a department at a continued loss.

I made an inventory of the properties of the Brooklyn Union Company as of October 1st, 1919 and I used unit prices of October 1st, 1919 in one valuation and in another valuation I used unit prices of January 1st, 1914, and I made an affidavit which was presented to the Court in the [fol. 1745] case of Charles D. Newton, Attorney-General, and others, against the Brooklyn Union Gas Company. As to how much I stated, or the amount that I stated as the reproduction cost of the gas manufacturing plants and equipments at the holder stations, exclusive of lands, buildings, etc. which were in existence on October 1st, 1919, but valued by using unit prices of January 1st, 1914. I will tell you what the figures are. I do not remember the prices. This is an exhibit in the case. If it is correct, the figures are

$4,356,126. I placed a valuation upon the gas holders that were owned by the company and in existence on October 1st, 1919, based on prices as of January 1st, 1914. According to this, it is $2,985,206 on a labor, material and sub-contract basis.

(Defendant's Exhibit No. 27 for identification.)

The figures which I have stated are the correct figures as to my value of the gas manufacturing plants and equipment at holder stations exclusive of land and buildings and holders, and the next figure was the value which I placed upon the holders, on a labor, material and sub-contract basis.

I have devoted to inventorying and appraising gas properties and testifying also in cases affecting gas companies during the past year, 80 to 90 per cent of my time. I have testified so far and appraised the properties of this company, the New York & Queens Company, the Bronx Company and Kings County Lighting Company, and I have [fol. 1746] been retained to appraise the properties of the other thirteen or fourteen companies operating in Greater New York. During that time I have also appraised properties in Westchester County.

I have sixty men in the Bartlett Hayward Company employed working for me in New York City, and their stenographers. In addition, I have had very material assistance from the officers and employees of the company and then I had a great deal of assistance from my own organization in Baltimore. I think perhaps 95 per cent, in generating capacity, of the water gas apparatus used by this plaintiff company has been installed by the Bartlett Hayward Company. About 80 per cent of the holder capacity has been installed by us. The Bartlett Hayward Company has also installed a great deal of other apparatus or equipment for the Brooklyn Union Company and its subsidiaries. Those particular items—the holders I computed very recently for my own information, the gas generating apparatus I know individually; but it is rather hard to say how much of the other apparatus, and I could not say offhand, what percentage, but it is a material, substantial amount—installed a great deal of it. Referring to page 15 of Exhibit No. 283 the reproduction cost of three Davidson pumps 14 by 8 1/2

by 14 is $3,391.19. I have no information that since June 1st those three pumps have been removed. I do not know whether I have or not. I have checked up some of the apparatus that has been removed, but I have not completed my check. Assuming that they had been removed on June [fol. 1747] 15th, if I had known they were to be removed, I would not have made any other estimate for the reproduction cost of those pumps as of June 1st, 1923, even if I had known that such pumps were to be removed because they had become inadequate or obsolete, and the same answer would apply to any other piece of apparatus which I have appraised but which has been removed since that date. Exhibit 283, so far as it contains physical properties appraised by me is my estimate of the reproduction costs of such properties new, that is, of new materials as of June 1st, 1923 and my exhibit 284 is my estimate of what it would cost to place existing properties of the company in condition equal to new, in my opinion, even through the greater part of the materials of such pieces of apparatus, *amy* be, would be, largely composed of old materials. I did not in reaching my estimates consider in any case the age of any of the properties which I appraised. I know that certain properties of this particular plaintiff have been removed since June 1st, 1923. I know the causes of such removals. Inadequacy might have been an incident in it. It was removed because it was more economical to use something else. Inadequacy has not been the cause of the removal of any piece of apparatus since June 1st, 1923. I will have to make some explanation. I just cannot say yes or no. I did not assume that certain pieces of apparatus had been removed because they had become inadequate, so I could not have taken it into consideration. During my experience as an [fol. 1748] operating engineer I have removed a water-gas set and substituted a larger set at plants over which I had control. That was because the business was growing so that you needed a larger capacity. The smaller unit which I replaced had become or was becoming inadequate and I do know as a fact that pieces of apparatus of the Brooklyn Union Company have been removed and replaced by units of larger size and larger capacity and because they had become inadequate, too, for serving people, but it was cheaper to replace them by a larger one than to build two smaller

ones. Two smaller ones would have done the work. The first machines that I ever operated thirty-five years ago were just the same, practically, as these double super-heater sets here. There was a very large amount of the retort system of water gas making abandoned, starting about thirty years ago and running down to about twenty years ago. For a period of about ten years they abandoned and took up with the apparatus of the type of the Williamson and the double super-heater or 3 shell machine sets as against the retort, and yet the first machine I operated thirty-five years ago was a 3 sheel machine set—thirty-six years ago, was a 3 shell machine. So that antedates all of that apparatus that was abandoned. That apparatus 36 years ago, to which I refer, was that a new type of apparatus which had just come on the market, comparatively new, the type formerly used in the gas making industry—before that was almost entirely coal gas. The particular apparatus [fol. 1749] that was in use at that time was developed and developed up to the modern coal gas apparatus. In use continuously in my life time. Water gas sets largely took the place of coal gas sets, to a very large extent, and that meant a change of equipment and apparatus. The physical properties which I have appraised here have substantially no use or value except for the operation of this company—very little. The tanks might be used for some purpose, but they would be of very little value comparatively outside of gas making and distribution. They would not be of much use without a franchise. When I valued them, I valued them upon the assumption that they had a franchise, so that such properties could not be separated from the land and readily sold except for scrap value. The equipment accounts under the Uniform System of Accounts I took right from the books. The Equipment Accounts total $653,132 upon Plaintiff's Exhibit No. 283. That was made up of several equipment accounts. The laboratory equipment, tools and implements, office furniture and fixtures, general stable equipment and general shop equipment, amounts for each are: Laboratory equipment $22,419; Tools and Implements, $143,305; Office Furniture and Fixtures $257,820; General Stable Equipment, $222,676, and General Shop Equipment $6,912. I made no detailed inventory of the equipment. I made no examination of such equipment. I assumed that the equipment was in good condition.

Under Taxes During Construction on page 2 of Plain-
[fol. 1750] tiff's Exhibit No. 283 I have not considered special franchise taxes. As to real estate taxes I considered land for two years and improvements on land for six months. My scheme contemplated the entire plants would be constructed and the mains laid before operation would begin. All the plants and the mains but not the services or meters, that is, after I had the plants entirely completed and all the mains laid, then there would be some operation. I figured we would not put in a service or put a meter in a man's place until we put gas on it and tested it out. The customer would be served the instant the operation begins, that is, some customers. Probably I can make it clear. You would build plant and lay the mains and put gas on the mains and blow the air out and get every main with gas on it, and then immediately start putting in services and meters so that substantially there would be no great lapse of time from the time you began to run gas through your mains until the time you would serve certain consumers, that would be substantially simultaneous.

[fol. 1751] The Brooklyn Union Gas Company

Brooklyn, N. Y., May 19, 1924.

ALTEN S. MILLER

Redirect:

At page 6211 of the mimeograph record I was asked these questions and made these answers:

"By Mr. Cummings:

"Q. Now, Colonel, on the meters your Exhibit No. 284 does not include any allowance for the repairs to any of the meters that you found on the district as of June 1st, 1923, does it?

"A. No.

"Q. So far as you were able to determine from your examination of the plant, the meters needed no repairs?

"A. Well, the meters are regularly turned over, like checkerbrick and other units.

"The Master: But your valuation given in this exhibit is based upon the assumption that none of those out on the district and in use needed any repairs?

"The Witness: Any more than they are getting, no; no more than they are getting now, regularly turned over.

"The Master: Well, if you made no allowance for repairs, then you must have assumed they needed no repairs?

"The Witness: Yes, sir."

I did not intend by this to testify that none of the meters on the district on June 1st, 1923, in fact needed repairs, because they are omitted from my exhibit No. 284 and they are regularly brought in, continually turned over, kept in [fol. 1752] good condition, and, therefore, are omitted. And if was for that reason, because they are regularly repaired and not with the intention of testifying that, as a matter of fact, none of the district needed repair, that I so prepared my exhibit and so answered the questions that have been read to me.

I did not intend to testify as a fact that the plaintiff owned on June 1st, 1923, no general equipment which needed repair, and I omitted that from my Exhibit No. 284, upon the same principle.

I testified that there was no duplication of interest in Organization & Development Expenses prior to construction.

On page 5 Exhibit 284 the sentence now reads: "Interest on Expenditures Incurred During this Period, Advertising, and so forth," I should like to add the words, "during this period" after the word "interest," so as to make the sentence read: "Interest during this period in expenditures incurred during this period advertising, and so forth."

By Mr. Dykman: I have made a study of the cost of material and labor entering into construction of plants and general structures for the manufacture and systems for the [fol. 1753] distribution of illuminating gas in what is now the City of New York prevailing during the period since 1850. In connection with this study, I obtained index numbers of wholesale prices from 1840 to 1923 published by the United States Department of Labor.

These index numbers in my opinion indicate the trend of prices of general commodities during the period from

1850 to 1895. Assuming that on January 1, 1896, the plaintiff owned plants and general structures for the manufacture, distribution and sale of illuminating gas, having a daily manufacturing capacity of 26,800,000 cubic feet; holders, having a capacity of 13,534,000 cubic feet; mains as follows:

One and one-half inch	3,867 feet.
Two inch	8,456 feet.
Three-inch	383,039 feet.
[fol. 1754] Four-inch	632,391 feet.
Six-inch	992,593 feet.
Eight-inch	308,608 feet.
Ten-inch	126,341 feet.
Twelve-inch	274,515 feet.
Sixteen-inch	75,355 feet.
Twenty-inch	93,683 feet.
Twenty-four-inch	4,928 feet.
Thirty-inch	474 feet.

88,024 services; 113,723 meters which have been acquired in the preceding November from the following companies:

The Citizens Gas Company which has been formed pursuant to an agreement dated August 27, 1891, consolidating two existing corporations;

The Citizens Gas Light Company, incorporated in 1858, and which commenced the construction of its manufacturing plant and the installation of its distribution system in the year 1860;

The Union Gas Light Company, incorporated in 1861; the Fulton Municipal Gas Company, which commenced the construction of its manufacturing plant and the installation of its distribution system in the year 1879; the Peoples Gas Light Company, which commenced the construction of its manufacturing plant and the installation of its distribution system in the year 1869; the Nassau Gas Light Company; which commenced the construction of its manufacturing plant and the installation of its distribution system in the year 1870; the Williamsburg Gas Light Company which commenced the construction of its manufacturing plant and the installation of its distribution system in the year 1850;

[fol. 1755] the Metropolitan Gas Light Company, which commenced the construction of its manufacturing plant and the installation of its distribution in the year 1871,

And the Brooklyn Gas Light Company, which commenced the construction of its manufacturing plant and the installation of its distribution system in the year 1849; all of which manufacturing plants and distribution systems continued to be extended up to the time of the sale to the plaintiff. I will state that in my opinion the properties of these companies so acquired ought to have cost on the basis of the prices prevailing during the period when the various units were constructed, $24,438,680.

Mr. Cummings: My objection, is, first, that it is incompetent, irrelevant and immaterial; second, it is not the best evidence; the books would be the best evidence. Third, it is an assumption of facts which have not been proven. Now, if you want to overrule that objection upon Mr. Dykman's promise that he will connect it up, that possibly might rest within your discretion, so that you could overrule that part of the objection that the books are the best evidence unless it is shown here conclusively that they do not contain this information. He has got to prove first, it seems so to me, that either the books are not available, or, if they are available, that they do not contain this data. He is resorting to secondary evidence without establishing the fact that primary evidence is not available.

[fol. 1756] The Witness: That figure, $24,438,680, does not include anything for land, nor for franchises, nor for working capital, nor did I in arriving at this opinion use the books of any of the so-called vendor companies.

I used the opening entry of the Brooklyn Union Gas Company for the furniture and fixtures and tools and implements, and that is all. I used the Senate Report, Second Sessions, 52nd Congress, 1892-1893, Wholesale Prices, Wages & Transportation, generally known as the Aldrich Committee Report and I also used what is known as Bulletin 284 of the Department of Labor, entitled Index Numbers of Wholesale Prices in the United States and Foreign Countries, dated October, 1921.

I used the weighted figures out of the Aldrich Report. I also used Bulletin 1626 of the Bureau of Labor Statistics, entitled Index Numbers of Wholesale Prices, 1840 to 1923.

Cross-examination:

In arriving at my estimate of $24,000,000, I estimated the value of the property specified in 1895 at 1895 figures. I assumed that they had the property specified in the question. The value in 1895 was $17,996,212. That was my estimate of the reproduction cost of that property at that time.

Now, the index number in 1895 based on the fully weighted Bureau of Labor report as shown by the Aldrich Committee Report based on standards of 1860 was 112.17. That is the average from 1849 to 1895. Now in bringing in the figures from 1892 to 1895 I had to take the 1913 base, because the Aldrich Committee Report stopped in 1891 and the 1913 base of the Bureau of Labor was carried back to the 1860 base by the figures of 1890 which appeared in both tables.

[fol. 1757] To convert one price level to the other I used 1.18. The average index number was 112.17, and the index number for 1895 was 82.6, so I multiplied the value in 1895 of the portions of the plant specified by 112.17 and divided by 82.6. I did not convert 1913 to the 1860 basis.

Then having found that the index number for 1895 was 82.6 and having determined that the average index number over the period from 1849 to 1896 was 112.17 I multiplied $17,996,212 by 112.17 and divided by 82.6 and that got me this $24,000,000. $24,438,680 that is the complete figure. That assumes that in each year from 1849 down to 1895 the same relative amount of additions were made to the plants, and also that the prices of cast iron, steel and so forth vary with the index price.

In 1849 one plant was started, the Brooklyn Gas Light Company. I don't know that that plant was constructed entirely during that year and I do not know what portion of it was constructed during the years 1849 down to 1860. I don't know how much of it was in existence at that time, from 1849 down to 1860. I don't know what was the next plant that was started. I don't know and could not tell you the relative dates here. I have seen them all, but I do not remember them. I have already told you that the computation assumes practically uniform construction. It does not make any difference which date or which was constructed at which time as long as the construction is substantially

uniform, it does not make any difference which is first or last, the answer will be the same.

In general, they were being constructed at more or less regular periods down the years.

[fol. 1758] I took it as helping my assumption that the construction was reasonably uniform. I understand that one plant was started in 1849. Williamsburgh in 1850. I don't know what part of Williamsburgh Plant was constructed in 1850. My understanding is that the construction was started and it was with that understanding that I based my figures. That would not qualify my answer whether they actually started that year or not, because the Brooklyn was already started, and whether it started in 1850 or 1851 would not change the answer.

The Citizens was started in 1860. I assumed the company was incorporated in 1858 and it started the construction of its plant and distribution system in 1860. I made no assumption as to the extent of the distribution system. I made no assumption as to the number of miles of the distribution system that were first completed in any of the plants.

The Union was incorporated in 1861; I don't know when construction began. I did not assume anything about that. I did not assume that they actually constructed. Yes, I assumed that they constructed a plant, but just when I don't know, probably soon afterwards, construction being assumed to be substantially uniform down through the period of all the companies, not the individual companies. It was incorporated in 1861.

The Peoples Gas Light Company was next. I assumed that 1869 was the date of the initial construction of the plant.

[fol. 1759] I did not assume anything about the extent of of the distribution system at that time, except in connection with all of the others, not anything about that alone.

Nassau was next. I assumed that that was constructed in 1870 and it is likewise true, that I made no assumption as to the extent of the distribution system, that is not alone.

The Metropolitan was the next plant. I assumed that was constructed in 1871. I made no assumption there as to the extent of the distribution system, that is not taken alone.

The Fulton Municipal was the next plant. I assumed that was constructed in 1879. I made no specific assumption as to the equipment of the Brooklyn Gas Light Company. My understanding is that it was coal gas, but I made no specific assumption. In my opinion it does not make any difference as to the cost of installing the machinery, whether it was coal gas or water gas or oil gas as of 1895.

This $24,438,880 in my opinion represents the cost of installing the machinery and the entire gas equipment, distribution system, covering the period from 1849 down to 1895. I assumed that they had some coal-gas and some water-gas. The Brooklyn had coal gas. I think it was the Nassau, I am not sure, but one of the other plants had some coal gas and the rest was water-gas. I assumed, then, that two plants had coal-gas apparatus, and the rest of the plants had water-gas apparatus. One of the plants had exclusively coal-gas; one plant, as I recollect it, had mixed gas, and the others were straight water-gas. It would make no difference in my valuation or in my figure [fol. 1760] if they were all water-gas or all coal-gas or half and half as of 1895.

I started with the proposition and I went back to 1895 as a basis of my figures, and the question is what it cost in 1895——

The Master: No, not what it cost in 1895.

The Witness: No, but, the equipment that was in, in 1895, is the basis; that is, the class of equipment that was used in 1895, and the water-gas and coal-gas apparatus cost about the same per unit of generator.

I made no specific assumption as to the dates of installation of equipment of the various companies which were in existence in 1895, as between any date, as of any specific date of installation. I used the average conditions from 1849 to 1895. In other words, I assumed that some of this machinery which we had on hand in 1895 was installled during a period of high prices which prevailed in Civil War times. Some of it, some of that machinery, holders, and some of the machinery and holders. I cannot tell what part of the machinery, the gas making machines I assumed had been installed during that period. I assumed that the

plants had originally been constructed and had the same class and character of machinery as they did in 1895 as to some types of units. In their first initial construction of the plants, I assumed that some portion of the plants was constructed entirely coal-gas plants. That is, some of the plants were entirely coal-gas plants originally, and some of them, I believe, were entirely water-gas plants originally. [fol. 1761] I assumed that some were coal-gas plants and some were water-gas plants. I did not divide them up. I could not say of each I assumed. All I know is that everything which was built originally, previous to 1875, was probably coal-gas. That is, at that period in our history (1875) came the change from coal-gas to water-gas or oil-gas.

Take the Brooklyn Gas Light Company. I assumed that that company commenced the construction of its manufacturing plant and the installation of its distribution system in the year 1849. And that was one of the assumptions of the question. I made no exact assumption as to how much of the properties of the Brooklyn Gas Light Company which were taken over in 1895 by the Brooklyn Union Gas Company were constructed or installed in 1849 or thereabouts. I took average prices from 1849 down and assumed that the system as a whole was increased by substantially uniform expenditures throughout the years.

I did assume that anything which the Brooklyn Union Gas Company took over from the Brooklyn Gas Light Company in 1895 had been in existence and in use since 1849 or thereabouts. The mains, holders, services and the meters and some part of their plant, a good deal of the plant; purifiers, condensers, probably, and so forth; I took the entire properties as a unit. In other words the Brooklyn plant was used to weight back the other plants subsequently put in. The expenditures for the entire system is not necessarily sub-divided between different parts of the system. But for the entire system, plant and distribution [fol. 1762] system. I have stated that I did not sub-divide as between plant and distribution system. This method of computation assumes substantially uniform expenditures through the period. I assumed that the expenditure would be such that there would be about a weighted amount. There might be some unusual expenditures in high years

and there might be some unusual expenditures in low years, but I assumed that the average cost would check back to the average index number. I did assume an average, but that does not mean that the expenditure would be the same each year.

I made no study of the various plants in order to advise myself as to the manner in which the additions were made.

In my reproduction cost estimate of $24,438,000 there was included certain amounts for my so-called undistributed structural costs. It is about 16 2/3's per cent of the total of $24,000,000 odd. I have not got the deta-ls showing the amount which I set aside for each one of them. I combine them in one and just take a certain percentage of them. 16 2 3's per cent of the total of $24,438,880. The figure of $24,000,000 does not include anything for going concern value as I have described it in this case. I estimated the reproduction cost of 1895, amounting to $17,996,216. The reproduction cost of the distribution system is; that is, how much the mains would be as of that date, was $5,038,656, and services $968,264, and meters $1,034,636; Manufacturing plant $8,040,000, Holders, $2,706,800; Offices and storerooms, $130,000. The familiar name is general structures; that covers the general office, the laboratory, the building now known as the Fitters School or used for a Fitters School; the Williamsburgh Branch and 130 Atlantic [fol. 1763] Avenue. I reached my figure on meters by taking the total number of meters and applying an average cost of $9.20 per meter. That is the average cost in 1895, that is meters set. I assumed that the average powers of the meter was something less than a five-light. The next size is a three-light, but the average would not necessarily average down to three because the next size is three. At that time the majority of the meters on the district were three-light meters. I suppose probably 60 per cent. of them were 3's and probably 30 per cent of them were 5's the other 10%, other sizes. I found no books indicating the size of the meters.

I don't remember the price in 1895. I know that at one time they sold up to $10 or $12 a piece, but they were below that in 1895, that is three light meters. It was in the 60's or 70's, I have forgotten when that 3 light meters were up to $10 or $12. Five-light meters in 1860 or 1870 ran up to $2

or $3 higher than three-light meters. I don't remember how much they were in 1895. The low price I think was in 1895, but I cannot give you that at the moment.

OFFERS IN EVIDENCE

Mr. J. A. Dykman: The plaintiff now proposes to offer in evidence certain minutes from the books recording the minutes of the directors of the various vendor companies. It is my understanding that the defendants agree that if Mr. Frederick R. Wogan, who has already been on the stand and testified to the receipt of other minute books of the vendor companies, were here, he would testify that these [fol. 1764] books were received in the same way and at the same time and have since been in the custody of the officers of the company.

Mr. Cummings: With the understanding that the defendants may go through the books and offer in evidence such other minutes as to them seems material or pertinent.

Mr. J. A. Dykman: Certainly. And therefore I will first have marked for identification book entitled "Minutes, 1848 Brooklyn Gas Light Company."

(Marked Plaintiff's Exhibit No. 285 for Identification.)

Mr. J. A. Dykman: Now I hand counsel for defendants, Plaintiff's Exhibit No. 285 for identification, so that they may follow my characterization of the various minutes which I offer in evidence from that exhibit. I offer in evidence the minutes of January 11th, 1847 showing the revival of this company by its stockholders. In it is disclosed the organization of the company in 1825, but it did nothing except hold meetings at various times until 1847.

(Received and marked Plaintiff's Exhibit No. 285-A.)

Mr. J. A. Dykman: I next offer in evidence the minutes of March 1, 1847 by which the president was authorized to make application to the City for the privilege of laying pipes in the City of Brooklyn.

(Received and marked Plaintiff's Exhibit No. 285-B.)

I offer in evidence the minutes of January 24th, 1848 in which authority was given to purchase from Andrew K. Hay property on the East River adjoining Jackson Ferry

at a price not exceeding the amount paid by him for the same.

(Received in evidence and marked Plaintiff's Exhibit No. 285-C.)

Mr. J. A. Dykman: Now I hand counsel for defendants Plaintiff's Exhibit No. 286 for identification, book entitled "Minutes 1849-1871, Brooklyn Gas Light Company's," and I offer from Plaintiff's Exhibit 286 for identification the minutes of June 14th, 1849, which record a contract with [fol. 1765] William Bucknall & Company to lay six miles of pipe.

(Received in evidence and marked Plaintiff's Exhibit No. 286-A.)

Mr. J. A. Dykman: The minutes of October 9th, 1849, containing a resolution to the effect that inasmuch as the works have been completed and put in full operation by the contractor, the Committee reports what officers, mechanics and operators will be required.

(Received in evidence and marked Plaintiff's Exhibit No. 286-B.)

Mr. J. A. Dykman: The minutes of October 20th, 1849, recording the approval of a contract with the Common Council for the City of Brooklyn for laying mains in the Sixth, Seventh, Eighth and Ninth Wards.

(Received in evidence and marked Plaintiff's Exhibit No. 286-C.)

Mr. J. A. Dykman: The minutes of October 26th, 1849, which reports the completion within a few days of six miles of mains.

(Received in evidence and marked Plaintiff's Exhibit No. 286-D.)

Mr. J. A. Dykman: The minutes of January 9th, 1850 which record authority for the issue of stock to the amount of $230,000 to William Bucknall & Company for work done under contract.

(Received in evidence and marked Plaintiff's Exhibit No. 286-E.)

Mr. J. A. Dykman: The minutes of March 12th, 1851 containing authority to erect a holder of 300,000 cubic feet capacity near the works.

(Received in evidence and marked Plaintiff's Exhibit No. 286-F.)

[fol. 1766] Mr. J. A. Dykman: The minutes of March 1851, contining authority to purchase thirteen lots bounded by Plymounth, Water and Gold Streets at $900 each for the erection of a holder.

(Received in evidence and marked Plaintiff's Exhibit No. 286-G.)

Mr. J. A. Dykman: The minutes of March 9th, 1852, which report the purchase of six lots on Marshall Street.

(Received in evidence and marked Plaintiff's Exhibit No. 286-H.)

Mr. J. A. Dykman: Minutes of July 13th, 1852, containing authority to purchase the property of Smith & Buckley, east of and at the foot of Hudson Avenue for $21,000.

(Received in evidence and marked Plaintiff's Exhibit No. 286-I.)

Mr. J. A. Dykman: Minutes of October 15th, 1852 containing authority to build a dock and purchase a lot adjoining the works.

(Received and marked Plaintiff's Exhibit No. 286-J.)

Mr. J. A. Dykman: Minutes of February 8th, 1853 recording a report to the Common Council that about 23 miles of mains have been laid in the first five wards, leaving about four miles to complete the entire district.

(Received in evidence and marked Plaintiff's Exhibit No. 286-K.)

Mr. J. A. Dykman: Minutes of October 31st, 1853, Committee Reports Additions to Works to cost about $26,500, and is given power to make them.

(Received in evidence and marked Plaintiff's Exhibit No. 286-L.)

Mr. J. A. Dykman: Minutes of October 10th, 1854 containing resolution that a committee be appointed to confer with the Williamsburgh Gas Light Company on the subject [fol. 1767] of a division of Territory in which gas pipes may be laid by each company respectively, and agree upon the boundary of the same subject to the approval of the Board.

(Received in evidence and marked Plaintiff's Exhibit No. 286-M.)

Mr. J. A. Dykman: Minutes of May 9th, 1855 recording two lots purchased on Remsen Street for office building at $7,000.

(Received in evidence and marked Plaintiff's Exhibit No. 286-N.)

Mr. J. A. Dykman: Minutes of February 25th, 1856, containing authority to purchase land bounded by Marshall, Little and John Streets at a price not to exceed $50,000.

(Received in evidence and marked Plaintiff's Exhibit No. 286-O.)

Mr. J. A. Dykman: Minutes of April 8th, 1862 containing authority for construction of New governors.

(Received in evidence and marked Plaintiff's Exhibit No. 286-P.)

Mr. J. A. Dykman: Minutes of April 7th, 1863 containing the approval of a contract with the Citizens Gas Light Company for the apportionment of district for the sum of $150,000.

(Received in evidence and marked Plaintiff's Exhibit No. 286-Q.)

Mr. J. A. Dykman: Minutes of November 13th, 1866 which approve the erection of a new gas holder and installation of a condenser.

(Received and marked Plaintiff's Exhibit 286-R.)

Mr. J. A. Dykman: Minutes of February 28th, 1867 containing authority to buy the Ruggles property lying be-

tween the works and the Navy Yard at a price not exceeding $90,000.

[fol. 1768] (Received in evidence and marked Plaintiff's Exhibit 286-S.)

Mr. J. A. Dykman: Minutes of March 12th, 1867 containing authority to lay 12, 20 and 24-inch mains.

(Received in evidence and marked Plaintiff's Exhibit 286-T.)

Mr. J. A. Dykman: Minutes of May 10th, 1867, containing approval of a contract with T. F. Rowland for a new holder.

(Received in evidence and marked Plaintiff's Exhibit No. 286-U.)

Mr. J. A. Dykman: Minutes of December 10th, 1867, reporting the fact that the new holder is ready for use.

(Received in evidence and marked Plaintiff's Exhibit No. 286-V.)

Mr. J. A. Dykman: Minutes of January 13th, 1870, recording an offer from the Peoples Gas Light Company to purchase a district for the sum of $500,000, as accepted.

(Received in evidence and marked Plaintiff's Exhibit No. 286-W.)

Mr. J. A. Dykman: Minutes of January 29, 1870 recording the approval of an agreement with Peoples Gas Light Company.

(Received in evidence and marked Plaintiff's Exhibit No. 286-X.)

Mr. J. A. Dykman: Minutes of February 8th, 1870 reporting that a contract with the Peoples Gas Light Company has been carried out and the money paid in.

(Received in evidence and marked Plaintiff's Exhibit No. 286-Y.)

Mr. J. A. Dykman: Minutes of February 8th, 1870 accepting the report of the Finance Committee recommending

the sale of a district to the Nassau Gas Light Company for $1,000,000.

(Received in evidence and marked Plaintiff's Exhibit No. 286-Z.)

Mr. J. A. Dykman: Minutes of June 22nd, 1870 reporting that a settlement has been made with the Peoples Gas Light Company.

[fol. 1769] (Received in evidence and marked Plaintiff's Exhibit No. 286-AA.)

Mr. J. A. Dykman: Minutes of October 7th, 1870 reporting the approval of a contract with the Nassau Gas Light Company for sale of a district to that company.

(Received in evidence and marked Plaintiff's Exhibit No. 286-BB.)

Mr. J. A. Dykman: Minutes of February 14th, 1871 in which authority is given to contract with T. F. Rowland for two new holders.

(Received in evidence and marked Plaintiff's Exhibit No. 286-CC.)

Mr. J. A. Dykman: Minutes of Many 18th, 1871, recording the ordering of 150 new retorts.

(Received in evidence and marked Plaintiff's Exhibit No. 286-DD.)

Mr. J. A. Dykman: Minutes of July 26th, 1871 reporting the completion of one new holder and the near completion of another.

(Received in evidence and marked Plaintiff's Exhibit No. 286-EE.)

Mr. J. A. Dykman: I hand counsel for defendants Plaintiff's Exhibit No. 287 for identification, book entitled "Minutes 1872-1881, Brooklyn Gas Light Company, and I offer in evidence from Palintiff's Exhibit No. 187 for identification minutes of a meeting June 12th, 1875 containing a report of the Construction Committee relative to the extension of the retort house, new benches, et cetera; the

acceptance by the Board and the reference of the matter to the president and the committee with power to proceed with the construction.

(Received in evidence and marked Plaintiff's Exhibit No. 287-A.)

Mr. J. A. Dykman: Minutes of December 23rd, 1875 con-[fol. 1770] taining the report of the Construction Committee showing that the contract for the construction of the dock in August 1853 amounted to $24,917.98.

(Received in evidence and marked Plaintiff's Exhibit No. 287-B.)

Mr. J. A. Dykman: Minutes of September 9th, 1880 recording an agreement between the Brooklyn Gas Light Company and the Fulton Municipal Company relative to the sale of gas in the territory of the Brooklyn Gas Light Company.

(Received in evidence and marked Plaintiff's Exhibit 287-C.)

Mr. J. A. Dykman: I hand counsel for defendant Plaintiff's Exhibit No. 288 for identification, book entitled "Minutes, 1881-1892, Brooklyn Gas Light Company, in order that it may be identified and at their disposal for examination and form part of this chain, but, I find nothing in it material to my case and so make no offer from it.

The next book of minutes of the Brooklyn Gas Light Company is already marked as Plaintiff's Exhibit 84, having been put in at the beginning of the case, and it brings the minutes up to 1895. Now, I hand Defendant's counsel Plaintiff's Exhibit No. 289 for identification, book entitled "Minutes 1859-1870, the Citizens Gas Light Company, and I offer in evidence minutes of April 12th, 1859, recording the appointment of a committee to select a suitable location for works.

(Received in evidence and marked Plaintiff's Exhibit No. 289-A.)

Mr. J. A. Dykman: Minutes of September 30th, 1859, containing authority to execute contract with James S. Libby [fol. 1771] and John Bloodgood for the erection of works.

(Received in evidence and marked Plaintiff's Exhibit No. 289-B.)

Mr. J. A. Dykman: Minutes of March 20th, 1860 containing report of a committee of the purchase of thirteen lots on Fifth Street for $7,150.

(Received in evidence and marked Plaintiff's Exhibit No. 289-C.)

Mr. J. A. Dykman: Minutes of March 27th, 1860 reporting the laying of a 4-inch main in Luqueer Street.

(Received in evidence and marked Plaintiff's Exhibit No. 289-D.)

Mr. J. A. Dykman: Minutes of May 2nd, 1860 containing a report of streets and avenues in which mains are to be laid.

(Received in evidence and marked Plaintiff's Exhibit No. 289-E.)

Mr. J. A. Dykman: Minutes of March 5th, 1861, report showing the boundaries of the several districts where mains are to be laid.

(Received in evidence and marked Plaintiff's Exhibit No. 289-F.)

Mr. J. A. Dykman: Minutes of December 23rd, 1861, in which it was voted that the sum of $21,788.76 be charged to Construction Account, being equitable proportion of expenses incurred since December 1st, 1860.

(Received in evidence and marked Plaintiff's Exhibit No. 289-G.)

Mr. J. A. Dykman: Minutes of December 30th, 1861 containing report of engineer that the contractors have laid to [fol. 1772] date 169,523 feet of pipe, and that the cost to complete the contract will be $54,362—will be or is, I don't know what that is.

(Received in evidence and marked Plaintiff's Exhibit No. 289-H.)

Mr. J. A. Dykman: Minutes of January 7th, 1862 reporting the acceptance by the contractors of $8,693.95 in full payment for work done.

(Received in evidence and marked Plaintiff's Exhibit No. 289-I.)

Mr. J. A. Dykman: Minutes of June 24th, 1862 by which a Committee appointed to adjust the Construction Account submitted a report showing that the account on June 1st, 1862 stood $779,041.74, and that a fair and equitable division of the account should be made as follows:

Charged to Real Estate, $452,625; charged to Street Mains, $247,375; balance to Construction Account, $79,041.74.

(Received in evidence and marked Plaintiff's Exhibit No. 289-J.)

Mr. J. A. Dykman: Minutes of March 31st, 1863 reporting the settlement with the Brooklyn Gas Light Company relative to the division of the Company's territory and service pipes for the sum of $150,000.

(Received in evidence and marked Plaintiff's Exhibit No. 289-K.)

Mr. J. A. Dykman: Minutes of April 7th, 1863 reporting the issue of $150,000 of bonds for payment of pipe and property purchased from the Brooklyn Gas Light Company [fol. 1773] and to purchase like amount of bonds at par.

(Received in evidence and marked Plaintiff's Exhibit No. 289-L.)

Mr. J. A. Dykman: Minutes of September 2nd, 1863, in which authority is given to purchase the building on Atlantic Avenue for $12,000.

(Received in evidence and marked Plaintiff's Exhibit No. 289-M.)

Mr. J. A. Dykman: Minutes of August 23, 1864, in which authority is given to construct additional benches at the works and to arrange with the proprietor of the Elmer patent for making gas in connection with the new benches.

(Received in evidence and marked Plaintiff's Exhibit No. 289-N.)

Mr. J. A. Dykman: Minutes of December 29th, 1864 containing authority to credit old pipe account to profit and loss account.

(Received in evidence and marked Plaintiff's Exhibit No. 289-O.)

Mr. J. A. Dykman: I hand Defendants' counsel Plaintiff's Exhibit No. 290 for identification, book entitled "Minutes, 1870-1890, Citizens Gas Light Company," and I offer in evidence minutes of March 1st, 1870 containing a report of the Committee that there was on January 1st, 1870 an undivided balance of $179,909; that they find that there has been extended during the last two years in improvement of the property of the company not less than $125,000 which justly belongs to the stockholders; resolved that the sum of $125,000 be charged to Construction Account to the credit of the Profit and Loss Account.

[fol. 1774] (Received and marked Plaintiff's Exhibit No. 290-A.)

Mr. J. A. Dykman: Minutes of meeting of January 24th, 1871 which authorized a contract for a new station meter, the capacity of which shall be not less than one and a half million cubic feet.

(Received in evidence and marked Plaintiff's Exhibit. No. 290-B.)

Mr. J. A. Dykman: Minutes of October 5th, 1871 which records a receipt of a proposition from the Metrop litan Gas Light Company for the purchase of pipe et cetera, lying in the districts bounded by Atlantic Street, Flatbush Avenue and Gowanus Canal for $350,000.

(Received in evidence and marked Plaintiff's Exhibit No. 290-C.)

Mr. J. A. Dykman: Minutes of May 27th, 1873, resolution that $200,000 of stock of the Metropolitan Gas Light Company in the treasury of this company be distributed to the stockholders of this company.

(Received in evidence and marked Plaintiff's Exhibit No. 290-D.)

Mr. J. A. Dykman: Minutes of July 9th, 1880, reporting the settlement of the claim against the Metropolitan Gas Light Company for certain pipe laid in the Citizens' district.

(Received in evidence and marked Plaintiff's Exhibit No. 290-E.)

Mr. J. A. Dykman: Minutes of July 8th, 1884, recording the presentation of a contract between the Citizens Gas Light Company and the Fulton-Municipal Company for the supply of gas-oil together with a bill of sale for a considera-
[fol. 1775] tion of $10,000 of all the street mains and branches laid by the Fulton Company in the district of the Citizens Gas Light Company.

(Received in evidence and marked Plaintiff's Exhibit No. 290-F.)

Mr. J. A. Dykman: Minutes of March 15th, 1887, which authorized the president to lay mains to increase supply.

(Received in evidence and marked Plaintiff's Exhibit No. 290-G.)

Mr. J. A. Dykman: I offer in evidence minutes of January 22nd, 1899 recording the destruction of three holders by explosion and estimate of loss incurred amounting to over $105,000.

(Received in evidence and marked Plaintiff's Exhibit No. 290-H.)

Mr. J. A. Dykman: I next offer minutes of April 15th, 1889 recording the execution of a contract with Bartlett-Hayward Company, for the erection of new holders.

(Received in evidence and marked Plaintiff's Exhibit No. 290-I.)

Mr. J. A. Dykman: We come now to the minute book of the Citizens Gas Company as distinguished from the Citizens Gas Light Company. The Master will recall that in 1891 there was a consolidation of the Citizens Gas Light Company and the Union Gas Light Company and the name of the new corporation was The Citizens Gas Company. This book has already been marked Plaintiff's Exhibit 85.

Mr. Deegan: You offer the whole book?

Mr. J. A. Dykman: No, just extracts from it. I therefore now offer from it the agreement on page 1 et seq. consolidating the two companies.

[fol. 1776] (Received in evidence and marked Plaintiff's Exhibit No. 85-A.)

Mr. J. A. Dykman: If it is not already in evidence. I offer in evidence minutes of April 4th, 1892 showing the proportion of the issue of stock in the new company to the stockholders of the Citizens Gas Light Company and the Union Gas Light Company.

(Received in evidence and marked Plaintiff's Exhibit 85-B.)

Mr. J. A. Dykman: The minutes of November 1st, 1892 with reference to the purchase of a new boiler at the Citizens Works.

(Received in evidence and marked Plaintiff's Exhibit No. 85-C.)

Mr. J. A. Dykman: Minutes of November 8th, 1892 with reference to a contract for the erection of a purifier house being approved.

(Received in evidence and marked Plaintiff's Exhibit 85-D.)

Mr. J. A. Dykman: Minutes of May 8th and June 26th, 1894, reporting the activities of the Fulton Municipal Company in the district of the Citizens Company.

(Received in evidence and marked Plaintiff's Exhibit Nos. 85-E and 85-F, respectively.)

Mr. J. A. Dykman: Minutes of August 1st, 1894 containing a report of the Executive Committee with reference to a 24-inch main between the Citizens and the Brooklyn Company.

(Received in evidence and marked Plaintiff's Exhibit No. 85-G.)

[fol. 1777] Mr. J. A. Dykman: I hand Defendants' Counsel Plaintiff s Exhibit No. 87, book entitled "Minutes 1879-1896, Fulton-Municipal Gas Company," and I now offer

from it: minutes of March 13, 1879, in which a committee was appointed to negotiate with the Mutual Gas Light Company of Brooklyn for terms of transfer of property of the Mutual Gas Light Company of Brooklyn.

(Received and marked Plaintiff's Exhibit No. 87-A.)

Mr. J. A. Dykman: Minutes of April 9, 1879, containing a report of a proposition for the purchase of the property of the Mutual Gas Light Company for $72,000, and the giving of authority to purchase the same. This minute shows that the contract between the two companies provided that the Fulton Municipal Gas Company should pay $72,000 for the property; $28,000 by the assumption of two mortgages; $4,400 in cash on or before May 1st, 1878; $17,600 in cash on or before July 1, 1879, and the remainder, $22,000 in stock of the Fulton Municipal Company at par; and also from the same meeting of April 9, 1879, the minute recording a proposition of Henry J. Davidson for the construction of works and laying of street mains for $925,000, payable in stock of the company, is accepted. I offer that.

(Received and marked Plaintiff's Exhibit No. 87-B.)

Mr. J. A. Dykman: Minutes of May 9th, 1879, reporting that the transfer of property purchased according to the minutes of April 9, 1879, has been completed; and, from the same minutes, the authorization to the President to borrow $22,000 due to James Jourdan on July 1, 1879.

[fol. 1778] (Received and marked Plaintiff's Exhibit No. 87-C.)

Mr. J. A. Dykman: Minutes of July 1, 1879, containing authority to enter into a supplemental contract with H. J. Davidson for the enlargement of the purifiers to a capacity of 1,000,000 feet, and foundations for benches, in consideration of 100 shares of stock.

(Received and marked Plaintiff's Exhibit No. 87-D.)

Mr. J. A. Dykman: Minutes of September 5, 1879, recording a supplemental contract with H. J. Davidson, as amended to read 200 shares of stock.

(Received and marked Plaintiff's Exhibit No. 87-E.)

Mr. J. A. Dykman: Minutes of October 15th, 1879, recording 658 shares issued to H. J. Davidson for the amount due him and $19,400 in stock at par paid him for extra work.

(Received and marked Plaintiff's Exhibit No. 87-F.)

Mr. J. A. Dykman: Minutes of November 7, 1879 recording the adoption of the proposal of H. J. Davidson for a settlement for mains, meters and services, amounting to $33,380.

(Received and marked Plaintiff's Exhibit No. 87-G.)

Mr. J. A. Dykman: Minutes of November 7, 1879, containing authority to pay R. Deeves $1,855 for extra work.

(Received and marked Plaintiff's Exhibit No. 87-H.)

Mr. J. A. Dykman: Minutes of February 12, 1880, in which the President is authorized to negotiate for the purchase of land adjoining tanks. I assume that means holders.

(Received and marked Plaintiff's Exhibit 87-I.)

[fol. 1779] Mr. J. A. Dykman: Minutes of March 31, 1880, record a notification that the contractor, Mr. Davidson has built the works, built under his contract in the possession of the company, with the exception of the tanks. It records the payment of 500 shares of stock to the contractor on account, and authorizies the President on completion of the tanks to make final payment.

(Received and marked Plaintiff's Exhibit 87-J.)

Mr. J. A. Dykman: Minutes of April 16th, 1880, recording notice from the engineer that the tanks are complete.

(Received and marked Plaintiff's Exhibit 87-K.)

Mr. J. A. Dykman: Minutes of April 23, 1880, in which the bill of Mr. Davidson for $5,174.44 is referred to the Executive Committee.

(Received and marked Plaintiff's Exhibit 87-L.)

Mr. J. A. Dykman: Minutes of April 28, 1880, in which it was resolved that the circulation of the present system of pipe be perfected at once by laying additional pipes.

(Received and marked Plaintiff's Exhibit 87-M.)

Mr. J. A. Dykman: Minutes of June 30, 1880, in which a committee is appointed to approve a contract with H. J. Davidson for the extension of the works.

(Received and marked Plaintiff's Exhibit No. 87-N.)

Mr. J. A. Dykman: Minutes of July 12, 1880, which contain authority to issue $300,000 in bonds for enlargement and improvement of the works and accept a proposition of H. J. Davidson to extend and complete the works to a capacity of 1,000,000 cubic feet.

(Received and marked Plaintiff's Exhibit 87-O.)

Mr. J. A. Dykman: Minutes of February 21, 1881, in which the President is authorized to pay the claim of H. J. Davidson, in bonds of the company.

[fol. 1780] (Received and marked Plaintiff's Exhibit 87-P.)

Mr. J. A. Dykman: Minutes of July 14, 1881, in which it is resolved that the laying of pipe in the Peoples and Metropolitan Gas Light Companies' districts be commenced August 1st, 1881. Of course that illustrates how impossible it is, where the books of the dedicator, as the Master called him, are lacking, to tell anything from the books of the company whose territory was invaded.

(Received and marked Plaintiff's Exhibit 87-Q.)

Mr. J. A. Dykman: Minutes of April 20, 1882, in which the executive committee is empowered to arrange to purchase land and increase capacity of works to 2,000,000 cubic feet per day, and the executive committee is directed to prepare plans and estimates for cost of land and erection of works of capacity of 3,000,000 cubic feet on Newtown Creek.

(Received and marked Plaintiff's Exhibit 87-R.)

Mr. J. A. Dykman: Minutes of June 19, 1882, recording the submission of a contract which had been executed with H. J. Davidson for the enlargement of works and purchase of pipe for laying ten to twenty miles of pipe. I am not omitting, sir, from any of these, dollars, where they appear, so that you will see we have resolutions that the claim of H. J. Davidson be paid with bonds and they do not tell

us how many bonds he got, and we have resolutions and notations that contents have been approved, but no statement of what the price was, all through here. In other words, I [fol. 1781] am not holding out dollars where they appear.

The Master: I understand that.

(Received in evidence and marked Plaintiff's Exhibit 87-S.)

Mr. J. A. Dykman: Minutes of October 26, 1882, recording the approval of an agreement with the Metropolitan Gas Light Company and authorizing the President to execute it, and also giving the President authority to commence laying a 12-inch main to connect with the Metropolitan Works.

(Received and marked Plaintiff's Exhibit No. 87-T.)

Mr. J. A. Dykman: Minutes of November 20, 1882, in which the engineer is directed to report, on the route and mains to connect with pipes in the Williamsburg District.

(Received and marked Plaintiff's Exhibit 87-U.)

Mr. J. A. Dykman: The minutes of April 16, 1883, which directs that a list of streets in the Brooklyn and Nassau Districts be prepared for laying five minutes of pipe, the majority to go into the Brooklyn District.

(Received and marked Plaintiff's Exhibit 87-V.)

Mr. J. A. Dykman: Minutes of June 18, 1883, approval of contract with H. J. Davison, for purifiers at a cost of $16,100 and $5,000 to be paid him for all claims for percentage for purchasing and laying pipes.

(Received and marked Plaintiff's Exhibit 87-W.)

Mr. J. A. Dykman: Minutes of November 19, 1883, which records the near completion of a contract with H. J. Davison.

(Received and marked Plaintiff's Exhibit 87-X.)

[fol. 1782] Mr. J. A. Dykman: Minutes of December 17, 1883, which contain a statement of mains laid in district of each of the several companies to date, showing a total of approximately 581½ miles.

(Received and marked Plaintiff's Exhibit 87-Y.)

Mr. J. A. Dykman: Minutes of November 17, 1884, which records the reading of a communication from the Williamsburg Gas Light Company with reference to the sale of the Fulton Company's mains laid east of Division Avenue; referred to the President to communicate the sense of this board.

(Received and marked Plaintiff's Exhibit 87-Z.)

Mr. J. A. Dykman: Minutes of May 18, 1885, containing authority to purchase house and lot adjoining company's purifying house.

(Received and marked Plaintiff's Exhibit 87-AA.)

Mr. J. A. Dykman: Minutes of June 15, 1885, containing authority to sell one of the company's exhausters for $1,500.

(Received and marked Plaintiff's Exhibit 87-BB.)

Mr. J. A. Dykman: Minutes of December 19, 1887, report progress in the construction of the new plant, and directing the President to report on the location and capacity of a new holder which was required.

(Received and marked Plaintiff's Exhibit 87-CC.)

Mr. J. A. Dykman: Minutes of May 21, 1888, containing authority to the President to purchase a plot on DeGray Street and Third Avenue for $18,000.

(Received and marked Plaintiff's Exhibit 87-DD.)

Mr. J. A. Dykman: Minutes of April 17, 1893, reporting [fol. 1783] purchases of cast iron pipe.

(Received and marked Plaintiff's Exhibit 87-EE.)

Mr. J. A. Dykman: I hand counsel for defendants Plaintiff's Exhibit No. 2901 for Identification, entitled "Minutes 1871-1888, the Metropolitan Gas Light Company," and offer from Plaintiff's Exhibit No. 2901 for identification.

Minutes of October 25, 1871, in which authority given to issue $600,000 of stock in payment for a district and for land for construction of works.

(Received and marked Plaintiff's Exhibit No. 291-A.)

Mr. J. A. Dykman: Minutes of December 21, 1871, containing authority to issue $10,000 of stock in payment for district and for land; and in the same meeting authority to execute contracts with the Citizens Gas Light Company for the purchase of a district.

(Received and marked Plaintiff's Exhibit 291-B.)

Mr. J. A. Dykman: Minutes of December 30, 1871, containing a recommendation for the purchase of land on Gowanus Canal for $80,000 payable in stock of the company at par.

(Received and marked Plaintiff's Exhibit 291-C.)

Mr. J. A. Dykman: Minutes of February 20, 1872, containing authority to purchase 5,000 feet of pipe for mains.

(Received and marked Plaintiff's Exhibit 291-D.)

Mr. J. A. Dykman: Minutes of February 27, 1872, containing authority to procure estimates for building holder and for appropriate site.

(Received and marked Plaintiff's Exhibit 291-E.)

Mr. J. A. Dykman: Minutes of March 23, 1872, containing authority to secure land for the construction of the holder.

[fol. 1784] (Received and marked Plaintiff's Exhibit 291-F.)

Mr. J. A. Dykman: Minutes of April 16, 1872, reporting the presentation of plans for the holder.

(Received and marked Plaintiff's Exhibit 291-G.)

Mr. J. A. Dykman: Minutes of April 24, 1872, recording the presentation of estimates for building works to manufacture 150,000,000 cubic feet per annum, and capable of being extended to a capacity of 300,000,000 cubic feet per annum, with a holder of 373,000 cubic feet capacity.

(Received and marked Plaintiff's Exhibit 291-H.)

Mr. J. A. Dykman: Minutes of November 27, 1872, recording the authorization of a contract for the construction of works for $210,000, payable in stock of the company or for

$177,433 of which $100,000 is to be paid in stock and the balance in cash.

(Received and marked Plaintiff's Exhibit 291-I.)

Mr. J. A. Dykman: Minutes of December 17, 1872, containing authority to build a dock.

(Received and marked Plaintiff's Exhibit No. 291-J.)

Mr. J. A. Dykman: Minutes of March 19, 1873, reporting a contract to build 150 feet of dock at a cost of $49 per linear foot.

(Received and marked Plaintiff's Exhibit 291-K.)

Mr. J. A. Dykman: Minutes of May 20, 1873, reporting the purchase of 12 and 16 inch pipe.

(Received and marked Plaintiff's Exhibit 291-L.)

Mr. J. A. Dykman: Minutes of October 21, 1873, containing authority to negotiate for the sale to the Citizens Company of 12-inch pipe laid at this company's expense.

[fol. 1785] (Received and marked Plaintiff's Exhibit 291-M.)

Mr. J. A. Dykman: Minutes of December 11, 1873, containing authority to settle with the contractor in full of balance due for construction of works, namely $89,800, in stock of the company.

(Received and marked Plaintiff's Exhibit 291-N.)

Mr. J. A. Dykman: Minutes of July 13, 1875, authority to purchase 4-inch pipe.

(Received and marked Plaintiff's Exhibit 291-O.)

Mr. J. A. Dykman: Minutes of July 13, 1880, reports the sale of 12-inch pipe in the Citizens District to that company. That would be a sale at that time to the Citizens Gas Light Company.

(Received and marked Plaintiff's Exhibit 291-P.)

Mr. J. A. Dykman: Minutes of December 29, 1887, containing authority to build an additional holder.

(Received and marked Plaintiff's Exhibit 291-Q.)

Mr. J. A. Dykman: Minutes of January 10, 1888 recording authority to purchase a plot 160 feet by 200 feet on Eleventh Street, through to Twelfth Street for $1,000 per lot 20 feet by 100 feet.

(Received and marked Plaintiff's Exhibit 291-R.)

Mr. J. A. Dykman: Minutes of January 25, 1888, containing authority to award contract to build tank for holder at cost of $25,034; for holder, a cost of $22,440, and for station meter at a cost of $1,760.

(Received and marked Plaintiff's Exhibit No. 291-S.)

Mr. J. A. Dykman: Minutes of February 14, 1888, containing authority to issue $250,000 of bonds in order to pro- [fol. 1786] vide for enlargement of company's plant.

(Received and marked Plaintiff's Exhibit No. 291-T.)

Mr. J. A. Dykman: I now hand Defendants' counsel Plaintiff's Exhibit 90, book entitled "Minutes 1888 to 1896, The Metropolitan Gas Light Company" and offer from it: Minutes of October 9, 1888, containing authority to settle with the contractor for balance due on holder.

(Received and marked Plaintiff's Exhibit No. 90-D.)

Mr. J. A. Dykman: Minutes February 10, 1891, containing authority to enter into a contract for the construction of a holder and a tank at a cost of $43,945.

(Received and marked Plaintiff's Exhibit No. 90-E.)

Mr. J. A. Dykman: Minutes of March 10, 1891, report of a contract with R. D. Hood & Company for holder and tank, and with Cronin & Sons for piles and for lumber.

(Received and marked Plaintiff's Exhibit No. 90-F.)

Mr. J. A. Dykman: Minutes of June 30, 1892, recording authority to enter into a contract with the Barlett-Hayward Company for the construction of a water gas plant at a cost of $65,300; with Logan Iron Works for oil tanks and hydrogen holder at a cost of $13,200; and with Hazelton Boiler Company for boilers at $6,500; total of $85,000; and also authority to erect a building for boiler. At the same meeting the offi-ers are authorized to issue $100,-

000 of the company's first mortgage bonds to pay for the above improvement.

(Received and marked Plaintiff's Exhibit No. 90-G.)

Mr. J. A. Dykman: Minutes of February 14, 1893, the officers authorized to issue $80,000 of company's first mort-
[fol. 1787] gage bonds, proceeds to be used in enlarging the plant of the company and the purchase and laying of street mains.

(Received and marked Plaintiff's Exhibit No. 90-H.)

Mr. J. A. Dykman: Minutes of May 8, 1894, containing a communication relative to the installation of larger main in district.

(Received and marked Plaintiff's Exhibit No. 90-I.)

Mr. J. A. Dykman: Minutes of March 11, 1895, containing authority to lay a 16-inch main.

(Received and marked Plaintiff's Exhibit No. 90-J.)

Mr. J. A. Dykman: Minutes of April 8, 1895, recording the purchase of 16-inch pipe at $20 per ton, and 4-inch pipe at $21.50 per ton.

(Received and marked Plaintiff's Exhibit No. 90-K.)

Mr. J. A. Dykman: Minutes of June 24, 1895, authority to purchase cast iron pipe.

(Received and marked Plaintiff's Exhibit No. 90-L.)

Mr. J. A. Dykman: I hand Defendants' counsel Plaintiff's Exhibit No. 292 for Identification, book entitled "Minutes 1871-1894, Nassau Gas Light Company." This book should be marked on the outside "1870," because, in fact, the minutes inside of it start with 1870; and I offer from Plaintiff's Exhibit 292 for Identification:

The minutes of October 7, 1870, containing a record of the acceptance of an offer of the Brooklyn Gas Light Company to sell a district for the sum of $1,000,000 in cash, and authority to purchase the cross dock on the Wallabout for $203,000.

[fol. 1788] (Received and marked Plaintiff's Exhibit No. 292-A.)

Mr. J. A. Dykman: Minutes of February 27, 1871, containing authority to erect a shop and stable on St. James Place for $1,675.

(Received and marked Plaintiff's Exhibit No. 292-B.)

Mr. J. A. Dykman: Minutes of December 19, 1871, reporting a purchase of property at Wythe Avenue and Keap Street for $16,000.

(Received and marked Plaintiff's Exhibit No. 292-C.)

Mr. J. A. Dykman: Minutes of March 9, 1872, in which the president reports entering into contract with T. F. Rowland for the erection of a tank and holder for the sum of $102,000.

(Received and marked Plaintiff's Exhibit No. 292-D.)

Mr. J. A. Dykman: Minutes of March 16, 1872, in which authority is given to enter into a contract with T. F. Rowland for the iron work for a holder for $98,000; with Seth L. Keany for the mason work for $68,623.92; with S. M. Weeks for the carpenter work for $15,834; and with J. H. Whittier for the benches and chimneys for $5,000.

(Received and marked Plaintiff's Exhibit No. 292-E.)

Mr. J. A. Dykman: Minutes of March 4, 1873, recording the sale of property on Wythe Avenue for $10,000.

(Received and marked Plaintiff's Exhibit No. 292-F.)

Mr. J. A. Dykman: Minutes of May 29, 1873, recording that gas is now first supplied from the works of the company.

(Received and marked Plaintiff's Exhibit No. 292-G.)

Mr. J. A. Dykman: Minutes of June 16, 1874, recording the purchase for $4,000 of four lots on Skillman Street for the new holder.

[fol. 1789] (Received and marked Plaintiff's Exhibit No. 292-H.)

Mr. J. A. Dykman: Minutes of September 24, 1874, recording the acceptance of the proposal of Friel & McNamara for mason work on the new tank and holder for $34,300.

(Received and marked Plaintiff's Exhibit No. 292-I.)

Mr. J. A. Dykman: Minutes of December 3, 1874 recording proposal of J. W. Starr for iron work for holder No. 2 as accepted at $18,500.

(Received and marked Plaintiff's Exhibit No. 292-J.)

Mr. J. A. Dykman: Minutes of February 21, 1882, recording the acceptance of the bid of Davis & Farnum for a new condenser for $8,000.

(Received and marked Plaintiff's Exhibit No. 292-K.)

Mr. J. A. Dykman: Minutes of May 20, 1884, recording an agreement between the Nassau Gas Light Company and the Fulton Municipal Company relative to the operations of the Fulton Company in the district of the Nassau Company.

(Received and marked Plaintiff's Exhibit No. 292-L.)

Mr. J. A. Dykman: Minutes of December 1, 1884, in which authority is given to purchase lots on Kent Avenue and Rutledge Street for new holder.

(Received and marked Plaintiff's Exhibit No. 292-M.)

Mr. J. A. Dykman: Minutes of January 20, 1885, reporting the purchase of lots for $26,000.

(Received and marked Plaintiff's Exhibit, No. 292-N.)

Mr. J. A. Dykman: Minutes of September 9, 1886, which report the completion of Holder No. 3.

[fol. 1790] (Received and marked Plaintiff's Exhibit No. 292-O.)

Mr. J. A. Dykman: Minutes of November 2, 1887, containing authority to erect an office building and accept bids thereon at a total cost of $19,004.

(Received and marked Plaintiff's Exhibit No. 292-P.)

Mr. J. A. Dykman: Minutes of January 27, 1888, containing authority to enter into a contract for piling for the extension to the works for the sum of $9,958.

(Received and marked Plaintiff's Exhibit No. 292-Q.)

Mr. J. A. Dykman: Minutes of February 21, 1888, containing authority to enter into a contract with various parties for the erection of retort house, boiler house, condenser, etc., at work.

(Received and marked Plaintiff's Exhibit No. 292-R.)

Mr. J. A. Dykman: Minutes of March 22, 1888, containing authority to award contracts to various parties for works extensions.

(Received and marked Plaintiff's Exhibit No. 292-S.)

Mr. J. A. Dykman: Minutes of June 1, 1888, recording the acceptance of bids for the erection of the stable and furnishing new purifier house.

(Received and marked Plaintiff's Exhibit No. 292.)

Mr. J. A. Dykman: Minutes of November 20, 1889, recording the receipts of bids on cast iron pipe.

(Received and marked Plaintiff's Exhibit No. 292.)

Mr. J. A. Dykman: Minutes of May 9, 1890, recording the purchase of a plot of Kent Avenue adjoining the works for $85,000.

[fol. 1791] (Received and marked Plaintiff's Exhibit No. 292-V.)

Mr. J. A. Dykman: Minutes of July 8th, 1891, recording the receipt of bids and acceptance for proposed new works.

(Received and marked Plaintiff's Exhibit No. 292-W.)

Mr. J. A. Dykman: So that the chain of minutes may be complete, I call attention to the fact that the minutes of the Nassau Gas Light Company from 1894 to 1896 have already been marked as Plaintiff's Exhibit No. 89, and I read nothing from them now.

Now I hand Defendants' Counsel, Plaintiff's Exhibit 293 for Identification, book entitled "Minutes 1864-1883, the Peoples Gas Light Company," and from Plaintiff's Exhibit 293 for Identification I offer:

Minutes of February 2nd, 1865, recording the appointment of a committee to inquire as to a suitable location in the City of Brooklyn for the erection of a gas works.

(Received and marked Plaintiff's Exhibit No. 293-A.)

Mr. J. A. Dykman: Minutes of October 28, 1865, reporting that the committee appointed to confer with the Greenpoint Gas Light Company report that the conference had been with results and the committee discharged.

(Received and marked Plaintiff's No. 293-B.)

Mr. J. A. Dykman: Minutes of November 4, 1865, recording the appointment of a committee to decide what mains and pipes and extensions are necessary.

(Received and marked Plaintiff's Exhibit No. 293-C.)

[fol. 1792] Mr. J. A. Dykman: Minutes of January 15, 1867, recording the necessity for extension of the works at Hunter's Point and the construction of works in Brooklyn.

(Received and marked Plaintiff's Exhibit No. 293-D.)

Mr. J. A. Dykman: Minutes of April 24, 1867, recording the appointment of a committee to select suitable place to locate the works.

(Received and marked Plaintiff's Exhibit 293-E.)

Mr. J. A. Dykman: Minutes of January 5, 1869, recording the approval of the proposition of John Bloodgood for the construction of works for the sum of $800,000.

(Received and marked Exhibit No. 293-F.)

Mr. J. A. Dykman: Minutes of January 12, 1869, recording the execution of a contract for the erection of a works.

(Received and marked Plaintiff's Exhibit No. 293-G.)

Mr. J. A. Dykman: Minutes of June 9, 1869, recording the leasing of a property at First Street, South 10th and 11th Street and East River for the erection of the works.

(Received and marked Plaintiff's Exhibit No. 293-H.)

Mr. J. A. Dykman: Minutes of January 22, 1870, recording authority to purchase from the Brooklyn Gas Light Company a district for a sum not exceeding $500,000.

(Received and marked Plaintiff's Exhibit No. 293-I.)

Mr. J. A. Dykman: Minutes of January 25, 1870, reporting the acceptance of a contract with the Brooklyn Gas Light Company for a district for the sum of $500,000, the Brooklyn Gas Light Company to supply gas to light the district [fol. 1793] for the term of one year.

(Received and marked Exhibit No. 293-J.)

Mr. J. A. Dykman: Minutes of March 8th, 1870, recording authority to purchase pipe.

(Received and marked Exhibit No. 293-K.)

Mr. J. A. Dykman: Minutes of April 12, 1870, reporting that the City has granted the right to the Peoples Company to lay mains.

(Received and marked Plaintiff's Exhibit No. 293-L.)

Mr. J. A. Dykman: Minutes of October 11, 1870, recording authority to negotiate with the Williamsburg Gas Light Company.

(Received and marked Plaintiff's Exhibit No. 293-M.)

Mr. J. A. Dykman: Minutes of January 10, 1871, recording authority to purchase land for a new holder.

(Received and marked Plaintiff's Exhibit No. 293-N.)

Mr. J. A. Dykman: Minutes of April 9, 1872, recording the appointment of a committee to meet the committee of the Williamsburg Gas Light Company.

(Received and marked Plaintiff's Exhibit No. 293-O.)

Mr. J. A. Dykman: Minutes of May 14, 1872, recording the discussion of the question of the Williamsburg Gas Light Company supplying consumers in the territory of this company.

(Received and marked Plaintiff's Exhibit No. 293-P.)

Mr. J. A. Dykman: Minutes of January 14, 1873, in which it is recorded that the company has determined to exercise its opinion and purchase the land on which the works are situated.

[fol. 1794] (Received and Marked Plaintiff's Exhibit No. 293-Q.)

Mr. J. A. Dykman: Minutes of April 8, 1873, dealing with the payment of the first installment of $60,000 for the land on which the works are situated.

(Received and marked Plaintiff's Exhibit No. 293-R.)

Mr. J. A. Dykman: Minutes of November 20, 1877, at which was discussed the operation of the Williamsburg Gas Light Company in the territory of this company.

(Received and marked Plaintiff's Exhibit No. 293-S.)

Mr. J. A. Dykman: Minutes of March 21, 1882, containing authority to erect a new holder.

(Received and marked Plaintiff's Exhibit No. 293-T.)

Mr. J. A. Dykman: Minutes of May 16, 1882, containing authority to enter into a contract for the erection of a new boiler.

(Received and marked Plaintiff's Exhibit No. 293-U.)

Mr. J. A. Dykman: Minutes of December 17, 1883, recording the service upon the Brooklyn Gas Light Company of a notice relative to the invasion of territory of this company by the Nassau Gas Light Company.

(Received and marked Plaintiff's Exhibit No. 293-V.)

Mr. J. A. Dykman: I now offer from Plaintiff's Exhibit 88, book entitled "Minutes 1884 to 1898, the Peoples Gas Light Company," which I hand counsel for the defendants the following:

Minutes February 19, 1884, relative to a committee to confer with the Brooklyn Gas Light Company relative to the activities of the Nassau Gas Light Company in this company's territory.

[fol. 1795] (Received and marked Plaintiff's Exhibit No. 88-A.)

Mr. J. A. Dykman: Minutes of March 18, 1884, which authorized the President to obtain a permit for the extension of mains to the Nassau Gas Light Company's territory.

(Received and marked Plaintiff's Exhibit No. 88-B.)

Mr. J. A. Dykman: Minutes of October 21, 1884, the President is authorized to purchase the main of the Nassau Gas Light Company laid by that company on Park Avenue.

(Received and marked Plaintiff's Exhibit No. 88-C.)

Mr. J. A. Dykman: Minutes of April 21, 1885, containing authority to erect a new station meter and remove the exhauster from the works to Skillman Street station.

(Received and marked Plaintiff's Exhibit No. 88-D.)

Mr. J. A. Dykman: Minutes of November 19, 1889, in which the President is authorized to contract for 600 tons of cast iron pipe.

(Received and marked Plaintiff's Exhibit No. 88-E.)

Mr. J. A. Dykman: I hand counsel for the defendants Plaintiff's Exhibit No. 294 for identification, book entitled, "Minutes 1851-1875, Williamsburgh Gas Light Company," and from it I offer in evidence:

Minutes of June 19th, 1850, recording the appointment of a Committee to make a contract with A. T. Smith.

(Received in evidence and marked Plaintiff's Exhibit 294-A.)

Mr. J. A. Dykman: The minutes of July 1st, 1850, containing a resolution that stock be issued to Mr. Smith on account of erection of the works.

[fol. 1796] (Received in evidence and marked Plaintiff's Exhibit 294-B.)

Mr. J. A. Dykman: Minutes of November 4th, 1850, approving an agreement for the purchase of works, mains and meters from Mr. Smith at $75,000.

(Received in evidence and marked Plaintiff's Exhibit 294-C.)

Mr. J. A. Dykman: Minutes of November 16th, 1850, reporting that the contract with Mr. Smith for the purchase of works, pipes, meters and so forth, has been closed.

(Received inevidence and marked Plaintiff's Exhibit 294-D.)

Mr. J. A. Dykman: Minutes of December 9th, 1850, recording that conveyances of the works, pipe, and so forth, by A. T. Smith had been approved, ordered delivered and recorded.

(Received in evidence and marked Plaintiff's Exhibit 294-E.)

Mr. J. A. Dykman: Minutes of February 18th, 1851, recording the appointment of a committee to make inquiry as to extending pipes through the Seventh Ward of Brooklyn.

(Received in evidence and marked Plaintiff's Exhibit 294-F.)

Mr. J. A. Dykman: Minutes of April 9th, 1851, recording the appointment of a Committee to negotiate a contract with the Common Council of Brooklyn for lighting the Seventh Ward.

(Received in evidence and marked Plaintiff's Exhibit 294-G.)

Mr. J. A. Dykman: Minutes of April 30th, 1851, appointing the Secretary and Treasurer to settle with A. T. Smith.

(Received in evidence and marked Plaintiff's Exhibit 294-H.)

Mr. J. A. Dykman: Minutes of July 30th, 1851, recording the appointment of a committee to select a site in Brooklyn for a gasometer. That is another name for a holder.

[fol. 1797] (Received in evidence and marked Plaintiff's Exhibit 294-I.)

Mr. J. A. Dykman: Minutes of September 10th, 1851, containing authority to purchase property adjoining the works on North 6th and North 7th Streets.

(Received in evidence and marked Plaintiff's Exhibit 294-J.)

The Master: What year is this?

Mr. J. A. Dykman: 1851, sir.

The Master: I was going to interrupt and say that there you have a holder built in 1851.

Mr. J. A. Dykman: No, not yet.

The Master: Well, we will assume it was built within a short time thereafter.

Mr. Cummings: They have on hand two holders that have been built in 1851 and the next one is 1867.

Mr. J. A. Dykman: This is only the appointment of a committee to select a site, so far.

The Master: Well, perhaps we will say it was done during the succeeding five years.

Mr. J. A. Dykman: I think it will be recorded here when it was done.

The Master: All right.

Mr. J. A. Dykman: Minutes of January 7th, 1851, recording the issuance of stock to Mr. Smith in payment for new benches.

(Received in evidence and marked Plaintiff's Exhibit 294-K.)

The Master: By the way, may I interrupt long enough to ask somebody to tell me what a bench is?

[fol. 1798] Mr. J. A. Dykman: It is part of the machinery for manufacturing coal-gas.

The Master: Yes, I know, but just what is a bench?

Mr. J. A. Dykman: Perhaps Mr. Atwood can explain it to you.

Mr. Atwood: A bench consists of a number of retorts.

The Master: Is it a retort or retorts?

Mr. Atwood: A number of retorts.

The Master: I have heard the word used several times, and I wondered what a bench was.

Mr. Atwood: A bench consists of so many retorts, three wide and three high, for instance.

Mr. J. A. Dykman: Minutes of March 18th, 1852, recording the purchase of ten lots on the block bounded by Eighth, Ninth, Ainslee and North Streets for $5,000 of the company's stock.

(Received in evidence and marked Plaintiff's Exhibit 294-L.)

Mr. J. A. Dykman: Minutes of May 26, 1852, recording the issuance of stock to A. T. Smith on account of extra pipe.

(Received in evidence and marked Plaintiff's Exhibit 294-M.)

Mr. J. A. Dykman: Minutes of December 21st, 1852, recording the appointment of a committee to take into consideration increase or extension of the works.

(Received in evidence and marked Plaintiff's Exhibit 294-N.)

Mr. J. A. Dykman: Minutes of January 5th, 1853, recording the report of the Committee on extension, that the necessary extensions and alterations should cost $50,000.

(Received in evidence and marked Plaintiff's Exhibit 294-O.)

Mr. J. A. Dykman: Minutes of February 4th, 1853, re-
[fol. 1799] cording the issuance of stock to the amount of $10,000 for A. T. Smith for extra pipe laid by him.

(Received in evidence and marked Plaintiff's Exhibit 294-P.)

Mr. J. A. Dykman: Minutes of June 3rd, 1853, recording a plan for connecting gas from the benches to the purifier, as approved.

(Received in evidence and marked Plaintiff's Exhibit 294-Q.)

Mr. J. A. Dykman: Minutes of June 9th, 1853, recording the matter of changing works referred to Committee with power to proceed with work.

(Received in evidence and marked Plaintiff's Exhibit 294-R.)

Mr. J. A. Dykman: Minutes of September 1st, 1853, approving the laying of pipes in the several street.

(Received in evidence and marked Plaintiff's Exhibit 294-S.)

Mr. J. A. Dykman: Minutes of September 7th, 1854, with reference to laying additional street mains.

(Received in evidence and marked Plaintiff's Exhibit 294-T.)

Mr. J. A. Dykman: Minutes of June 8th, 1854, recording an estimate of necessary extensions to the works at a cost of $69,075.

(Received in evidence and marked Plaintiff's Exhibit 294-U.)

Mr. J. A. Dykman: Minutes of July 8th, 1854, recording a report of a contract for the erection of a new holder and extension at works for the sum of $80,000, part in bonds, balance in cash.

(Received in evidence and marked Plaintiff's Exhibit 294-V.)

[fol. 1800] Mr. J. A. Dykman: Minutes of November 14th, 1854, recording a proposal from the Brooklyn Gas Light Company that the Cities of Brooklyn and Williamsburgh were to be united and an agreement made between the two companies relative to limiting their respective districts.

(Received in evidence and marked Plaintiff's Exhibit 294-W.)

Mr. J. A. Dykman: Minutes of November 14th, 1854, reporting a contract for pipe to be made and paid for in stock.

(Received in evidence and marked Plaintiff's Exhibit 294-X.)

Mr. J. A. Dykman: Minutes of January 10th, 1855, containing a detailed statement of the affairs of the company, showing the amount in construction and other accounts, showing that sums previously to the debit of profit and loss and to the debit of suspense are now charged to construction.

(Received in evidence and marked Plaintiff's Exhibit 294-Y.)

Mr. J. A. Dykman: Minutes of March 16th, 1855, committee appointed to purchase for the account of the company, payment to be made in stock, articles as may be needed to the extent of $40,000 for Extension Account.

(Received in evidence and marked Plaintiff's Exhibit 294-Z.)

Mr. J. A. Dykman: Minutes of September 28th, 1855, recording contract between the Williamsburgh Gas Light Company and the Brooklyn Gas Light Company, setting forth and fixing boundary lines between the two companies, Approved.

(Received in evidence and marked Plaintiff's Exhibit 294-AA.)

Mr. J. A. Dykman: Minutes of January 18th, 1856, containing a statement showing the amount in the Construction Account.

[fol. 1801] (Received in evidence and marked Plaintiff's Exhibit 294-BB.)

Mr. J. A. Dykman: Minutes of July 30th, 1856, recording what items in the Construction Account are to be charged to gas manufacture.

(Received in evidence and marked Plaintiff's Exhibit 294-CC.)

Mr. J. A. Dykman: Minutes of January 12th, 1857, providing that the gas manufacture account be charged with an item of $12,000 for wear and tear of the works, and credited to Construction Account.

(Received in evidence and marked Plaintiff's Exhibit 294-DD.)

Mr. J. A. Dykman: Minutes of January 18th, 1858, Construction Account credited with stock of meters on hand, and Meter Account opened; Profit and Loss Account to be opened, and an item of $21,011.75 to the credit of Gas Manufacture, be carried in that account.

(Received in evidence and marked Plaintiff's Exhibit 294-EE.)

Mr. J. A. Dykman: Minutes of February 8th, 1858, statement that meters on hand amounted to $15,279.50.

(Received and marked Plaintiff's Exhibit 294-FF.)

Mr. J. A. Dykman: Minutes of April 12th, 1858, stock to the amount of 193 shares to be issued in settlement of suits and charged to Construction Account.

(Received in evidence and marked Plaintiff's Exhibit 294-GG.)

Mr. J. A. Dykman: Minutes of June 14th, 1858, stock to the amount of 50 shares in settlement of suit to be charged to Construction Account.

[fol. 1802] (Received in evidence and marked Plaintiff's Exhibit 294-HH.)

Mr. J. A. Dykman: Minutes of February 14th, 1859, 100 shares of stock to be issued in settlement of suits, and charged to Construction Account.

(Received in evidence and marked Plaintiff's Exhibit 294-II.)

Mr. J. A. Dykman: Minutes of February 14th, 1859, authority to purchase pipe and retorts, 4 and 3 inch pipe at $42 a ton.

(Received in evidence and marked Plaintiff's Exhibit 294-JJ.)

Mr. J. A. Dykman: Minutes of February 29th, 1860, consideration of the purchase of a new location for works and authority given to purchase real estate known as the Ely property for $45,000.

(Received in evidence and marked Plaintiff's Exhibit 294-KK.)

Mr. J. A. Dykman: Minutes of March 17th, 1860, report the purchase of the Ely property for $48,000.

(Received in evidence and marked Plaintiff's Exhibit 294-LL.)

Mr. J. A. Dykman: Minutes of October 15th, 1860, authority given to enter into the contract for the building of a bulkhead

(Received in evidence and marked Plaintiff's Exhibit 294-MM.)

Mr. J. A. Dykman: Minutes of May 20th, 1861, authority to purchase pipe and retorts, 3 and 4-inch pipe at $40 a ton; 16 and 20-inch pipe at $36. a ton.

(Received in evidence and marked Plaintiff's Exhibit 294-NN.)

Mr. J. A. Dykman: Minutes of May 20, 1861, resolution passed to build two tanks for holders on the company's property.

(Received in evidence and marked Plaintiff's Exhibit 294-OO.)

Mr. J. A. Dykman: Minutes of March, 10th, 1862, specifications submitted for new holder.

[fol. 1803] (Received in evidence and marked Plaintiff's Exhibit 294-PP.)

Mr. J. A. Dykman: Minutes of April 10th, 1865, recording the sale of sixteen lots on North Eighth Street.

(Received in evidence and marked Plaintiff's Exhibit 294-QQ.)

Mr. J. A. Dykman: Minutes of December 11th, 1865, committee appointed to confer with the Brooklyn Gas Light Company to ascertain upon what terms the Brooklyn Gas Light Company will dispose of its rights in the Nineteenth Ward.

(Received in evidence and marked Plaintiff's Exhibit 294-RR.)

Mr. J. A. Dykman: Minutes of January 14th, 1867, at which it is reported that a plot at Fourth Street and South Second Street had been bought for $5,000. That was the location of the office.

(Received in evidence and marked Plaintiff's Exhibit 294-SS.)

Mr. J. A. Dykman: Minutes of February 11th, 1867, containing authority to sell lots and buildings on the old works property for $10,000.

(Received in evidence and marked Plaintiff's Exhibit 294-TT.)

Mr. J. A. Dykman: Minutes of April 1st, 1867, Committee authorized to offer the Green Point Gas Light Company 66⅔ per cent. on their capital stock of $80,000 for all their rights property and so forth.

(Received in evidence and marked Plaintiff's Exhibit 294-UU.)

Mr. J. A. Dykman: Minutes of May 13th, 1867, report the purchase of the Greenpoint Company's works, and so forth, for $50,000 and the transfer of the stock of the company at $31.25 per share.

[fol. 1804] (Received in evidence and marked Plaintiff's Exhibit 294-VV.)

Mr. J. A. Dykman: Minutes of June 10th, 1867, committee appointed to negotiate with the Brooklyn Gas Light Company for the sale of its property and privileges in the Nineteenth Ward for $75,000.

(Received in evidence and marked Plaintiff's Exhibit 294-WW.)

Mr. J. A. Dykman: Minutes of February 11th, 1867, recording the authority to undertake a contract for a new gas holder, with power to sell the old holder.

(Received in evidence and marked Plaintiff's Exhibit 294-XX.)

Mr. J. A. Dykman: Minutes of January 13th, 1868, recording the making of a contract for the erection of a new holder in the sum of $36,000.

(Received in evidence and marked Plaintiff's Exhibit 294-YY.)

Mr. J. A. Dykman: Minutes of May 11th, 1868, recording authority to procure plans and estimates for the erection of an office building.

(Received in evidence and marked Plaintiff's Exhibit 294-ZZ.)

Mr. J. A. Dykman: Minutes of February 13th, 1871, reporting that real estate stands on the books at $52,169, much below value, and instructing the secretary to charge

the Real Estate account with $247.83 1., to bring the amount up to $300,000, and that the Contingent Account be credited, and Profit and Loss Account charged with $500,000, so as to balance the account.

(Received in evidence and marked Plaintiff's Exhibit 294-AAA.)

Mr. J. A. Dykman: Minutes of July 10th, 1871, containing a statement that the Construction Account stands charged [fol. 1805] with sums much less than the value of the property, and the secretary is instructed to charge the Construction Account with $500,000 and credit Profit and Loss with the same amount.

(Received in evidence and marked Plaintiff's Exhibit No. 294-BBB.)

Mr. J. A. Dykman: Minutes of November 13th, 1871, containing authority to purchase for not to exceed $14,500, lots on First and North 12th Streets.

(Received in evidence and marked Plaintiff's Exhibit No. 294-CCC.)

Mr. J. A. Dykman: Minutes of December 11th, 1871, reporting the purchase of the lots for $14,500.

(Received in evidence and marked Plaintiff's Exhibit No. 294-DDD.)

Mr. J. A. Dykman: Minutes of August 12th, 1872, recording authority to purchase new condensing apparatus.

(Received in evidence and marked Plaintiff's Exhibit No. 294-EEE.)

Mr. J. A. Dykman: Minutes of September 9th, 1872, recording the acceptance of a proposal for new condensing apparatus at $12,073 92.

(Received in evidence and marked Plaintiff's Exhibit No. 294-FFF.)

Mr. J. A. Dykman: I hand counsel for the defendants Plaintiff's Exhibit No. 295 for identification, book entitled, "Minutes 1876 to 1895, Williamsburg Gas Light Company

and offer from it minutes of June 23, 1877, recording contract for four-inch pipe at $30.50 a ton.

(Received in evidence and marked Plaintiff's Exhibit No. 295-A.)

Mr. J. A. Dykman: Minutes of October 8th, 1877, record-[fol. 1806] ing the purchase of real estate at the corner of First Street and North Eleventh Street.

(Received in evidence and marked Plaintiff's Exhibit No. 295-B.)

Mr. J. A. Dykman: Minutes of August 12th, 1878, containing a resolution in reference to the Meter Account, which is reduced by a credit of $13,540.95 charged to Profit and Loss.

(Received in evidence and marked Plaintiff's Exhibit No. 295-C.)

Mr. Cummings: Depreciation on meters?

Mr. J. A. Dykman: Except that "depreciation" had always been used by these companies in the sense of "withdrawal."

Minutes of January 8th, 1879 recording a deduction of $14,639.25 from the Meter Account, charged to Profit and Loss.

(Received in evidence and marked Plaintiff's Exhibit No. 295-D.)

Mr. J. A. Dykman: Minutes of July 14th, 1879, directing the Secretary, as per a resolution of August 12th, 1878 to debit the Profit and Loss Account with $9,353.25 and credit the Meter Account with an equal amount, leaving the Meter Account charged with $31,000 and the present estimated value.

(Received in evidence and marked Plaintiff's Exhibit No. 295-E.)

Mr. J. A. Dykman: Minutes of May 13th, 1881, recording the purchase of a new scrubber in connections of the works and a contract for iron pipe.

(Received in evidence and marked Plaintiff's Exhibit No. 295-F.)

Mr. J. A. Dykman: Minutes of May 24th, 1881, containing [fol. 1807] proposed bases of agreement between the Williamsburgh Gas Light Company and the Fulton Municipal Company.

(Received and marked Plaintiff's Exhibit No. 295-G.)

Mr. J. A. Dykman: Minutes of June 10th, 1881, recording that an agreement between the Williamsburgh and Fulton Municipal Companies has been signed by the president of each company and approved.

(Received and marked Plaintiff's Exhibit No. 295-H.)

Mr. J. A Dykman: Minutes of June 9th, 1882, recording the purchase of 4, 5 and 6-inch pipe at $41 a ton.

(Received in evidence and marked Plaintiff's Exhibit No. 295-I.)

Mr. J. A. Dykman: Minutes of March 14th, 1884, recording authority to take up with the Fulton Municipal Company the matter of purchase of their pipe in this, the Williamsburgh Company's district.

(Received in evidence and marked Plaintiff's Exhibit No. 295-J.)

Mr. J. A. Dykman: Minutes of February 13th, 1885, containing authority to purchase requirements of cast iron pipe.

(Received in evidence and marked Plaintiff's Exhibit No. 295-K.)

Mr. J. A. Dykman: Minutes of March 12th, 1886, containing authority to enter into a contract for the erection of a stack of benches at the works for $47,750.

(Received in evidence and marked Plaintiff's Exhibit No. 295-L.)

Mr. J. A. Dykman: Minutes of February 11th, 1887, recording authority to purchase lots on North 12th Street [fol. 1808] for $5,000 and sell lots on Fifth and North Eighth Streets.

(Received in evidence and marked Plaintiff's Exhibit No. 295-M.)

Mr. J. A. Dykman: Minutes of June 15th, 1890 in which the officers are authorized to take action in the matter of erecting water-gas generators.

(Received in evidence and marked Plaintiff's Exhibit No. 295-N.)

Mr. J. A. Dykman: Minutes of Febr. 12th, 1892, in which attention of the officers is called to the necessity of increasing the company's plant.

(Received in evidence and marked Plaintiff's Exhibit No. 295-O.)

Mr. J. A. Dykman: Minutes of March 11th, 1892, recording the reference of the matter of making extensions to the company's plant to the officers with power.

(Received in evidence and marked Plaintiff's Exhibit No. 295-P.)

Mr. J. A. Dykman: Minutes of August 23rd, 1893, recording consideration of the fact that the Fulton-Municipal Company has made a connection with the gas holder of the Peoples Company.

(Received in evidence and marked Plaintiff's Exhibit No. 295-Q.)

Mr. J. A. Dykman: Minutes of August 30th, 1895 which empower the Executive Committee to take steps relative to entering the territory of the Peoples Gas Light Company.

(Received in evidence and marked Plaintiff's Exhibit No. 295-R.)

Mr. J. A. Dykman: I desire to state that the last minute book of the Williamsburgh Gas Light Company, 1895 to 1896, has already been marked as plaintiff's exhibit No. 86 I have nothing to read from it at this time.

[fol. 1809] Brooklyn, New York, May 23rd, 1924.

H. M. ADDINSELL

Direct:

I am an investment banker, director and officer of Harris, Forbes & Company, who are one of the largest houses in the business. The main office of Harris, Forbes & Company is at 56 William Street, New York City. We have in Boston another main office. In Chicago another bank with which we are affiliated and which was formerly our Chicago office, is the Harris Trust & Savings Bank; and in addition we have a large number—I don't recall the exact number—perhaps twenty or more—of branch sales offices primarily devoted to the sale of bonds. I have specialized in public utility securities. I have been with Harris, Forbes and Company for about eighteen years, excepting the two years that I was in the army, and during that time my work has been from the beginning onward entirely in what we call our corporation buying department which has to do with the purchasing of public utility bonds of various kinds. I also have had some experience along general lines in the Investment Bankers Association of America, which as you [fol. 1810] know, is an association of all the leading investment, banking houses, and in that I have been a member of the Public Service Securities Committee for a considerable number of years and served one year as chairman of it. I think I have made a study and acquired a knowledge of public utilities not only in the city of New York but throughout the United States. I formerly lived in Brooklyn for thirty-six years and am familiar with the territory here.

Regarding the floating of securities of new public utilities entering the business, I won't attempt to say that this is absolutely inclusive, because I have been in the business a long while, but as typical we have financed the construction of water powers and steam stations from the ground up in various parts of the country. As a matter of fact, right now, I am engaged in working out an arrangement for financing a series of water powers in Pennsylvania, in advance of their actual completion. Of course, the large bulk of our business that I have handled myself has been the financing and re-financing of existing projects and extensions thereof, though*t* we do have and I have been in con-

tact with, the other type; that is construction enterprises. I don't recall any new gas company where gas was being [fol. 1811] put into the field, that we have had the financing of. Plaintiff's Exhibit No. 283 page 5 the portion headed 'Cost of Financing,' in the light of my experience it contains an accurate statement of a condition confronting the promoters of a gas company to manufacture and distribute illuminating gas in the city of New York. This same condition exists in either case, irrespective of whether it is proposed to purchase an established business or to organize, construct and develop a new enterprise. The cost in the case of the new enterprise is greater than it is in the case of the established one. The conditions exist in either case. Speaking of Plaintiff's Exhibit No. 283, I think as a general average 5 per cent is conservative.

[fol. 1812] ADDINSELL

Cross:

I am not an engineer. We use every care to protect our investors, in making our examinations into any plant. And we have an established clientele, the buyers of securities. It is like any other large merchandising business; we are adding to it gradually. If a concern such as the Brooklyn Union Gas Company wished to construct a plant and supply the consumers with the gas in the city of Brooklyn, I assume that would be an attractive investment. I am not familiar with the financial details about the Brooklyn Union Gas Company nor the physical data. I am not asking about the amount of money; the cost of financing a new enterprise would be larger than financing a going concern. If they had had a plant in the city of Brooklyn at one time and they were going to reconstruct a plant, in that case you would have the benefit of the established credit of the going concern, so that would not be as great as if you were starting from the whole cloth without any previous background of earnings or credit. Having lived here in Brooklyn, I know the people of Brooklyn are accustomed to the use of gas. When a concern contemplates raising money for the construction of a plant, that is the first thing that they do, pro- [fol. 1813] vide some sort of a plan of construction and its probable cost of construction and submit it to us. That is

pretty apt to be the case. Assume that they were going to build a gas plant here in the city of Brooklyn; the promoters in the way of data would bring to us a statement of the property existing and to be built; the earnings, if any, existing—I mean the estimated earnings; let me go back again; we are supposing now that there is absolutely nothing, no mains, no nothing. Then they would bring us in that event, to simplify a little bit, a statement of the project, of the physical property they propose to build, the cost of that property, the extent of it—I mean the estimated cost of it and the estimated cost of all the elements that go into making up the final dollars that would have to be raised to produce the property, an estimate of the earnings. I am one of the persons in my particular firm that a promoter would bring that to. It might be myself or it might be one of the partners. I am one of those.

Of course, this is a situation here, which I say frankly that I have not had any experience with; that is—of a great city with no gas in it and in this modern day somebody comes along and says, "We are going to put a gas plant in [fols. 1814 & 1815] the city of Brooklyn," and so I hesitate to answer, because I would want to think a great deal about what I would want to do with it, whether I would want to participate in the financing of it or not. I would want to think it over to see if it would be a good proposition here in the city of Brooklyn, assuming that they didn't have one. I have got to explain the business we are in; it is not a promotion, it is the business of selling bonds of existing properties where there is an established credit and where there is a prospect of establishing credit after construction, through contracts and other ratifications so the question of what we would do, whether we would want to participate in a pur-ly construction enterprise with no definite guarantee of earnings, although they were estimated, and although the great city of Brooklyn would undoubt*ab*ly use a great deal of gas, is one that I would not want to answer now, because it is one that I would not answer the promoters specifically under those conditions. I certainly have promoted power companies. The power cases that we have promoted, we have had in all cases, a certified—or perhaps I should say a contracted-for arrangement so far as their project was concerned; that is to say, when the plant was completed, we

[fol. 1816] have had responsible people ready and legally committed to purchase the product, thus assuring earnings on the project and assuring us of interest on the bonds. Our company does not make a practice of floating securities for new enterprises unless their output is guaranteed or we are sure it is going to be taken. I cannot tell now whether our company would be interested in the flotation of any securities for a new enterprise in the City of Brooklyn which was to — built here on June 1, 1923. I don't know the cost of financing such a project, but I do know what the low limits would be of such a cost. I have never had any experience in financing a proposition of that kind from the ground up. * * *

[fol. 1817] Public utility bonds are becoming more and more standardized all the time, and more and more generally recognized as an attractive type of security. Recently our company has floated six per cent bonds of the Southern California Edison Company. I do not remember what those are offered at. I think 98½ is the figure. We offer a great many of them and I do not remember all of the dates and figures. We also offer six per cent bonds of the Illinois Power & Light Company. I do not remember the figures or the dates those were offered at because there are so many of them. Our Company also offered six per cent bonds of the Northern States Power Company. I think they were offered to the public at 97½. I do not remember; neither do I remember the dates. Our company also offered the 5½ per cent bonds of the Rochester Gas & Electric Company. In saying we offered them, sometimes we have associates. And we were members of a syndicate or sometimes the head of it. That answer applies to all [fol. 1818] these securities. I do not recall that we offered the 5½ per cent bonds of the Rochester Gas and Electric Company at 95½. They were offered in December, 1923, approximately. The Los Angeles Gas and Electric Companies is one of the companies whose bonds we float with associates. They are six per cent bonds. I do not remember the figures at which we offered them. The company also floated the 5½ per cent bonds of the Illinois because there are two others, one in Missouri. I do not remember the exact date that they were floated nor the exact price. I do not recall that our company offered the *the* six

per cent bonds of the Southern California Edison Company at 99 in March, 1924. I recall offering the 5½ per cent bonds of the Duquesne Light Company. I would not say offhand they were offered at 99. That is probably the case. I do not remember the exact date. The company does not pay out in actual cash to our concern for the flotation of the securities. In fact they get money and have to pay interest on a larger sum. They sell the securities at a discount. It is the usual custom that interest is amortized over the life of the security. And this five points represents the differential in that transaction in general. The method that is gone through is this: We determine what we think is the price that the securities can be sold to the [fol. 1819] public, and then we buy the bonds at a sufficient margin under that price to enable us to pay the cost of floating them and make a reasonable profit on it. It might not be less than the face value of the bonds if the bonds could be sold at a premium, but to make a concrete illustration, supposing we could sell a block of bonds at par then we would buy them, just as a general statement, at 95 from the company and the company would get 95 instead of par. And if the bonds should be offered on the market at 97, we could then give the company about 92. What they have to do is to pay a return upon a larger amount of money; but sometimes it is arranged so that actual money passes. That is, in some states bonds cannot be sold at a discount by a company, and in that event we buy them at par and the company has to pay us a commission of say, these five points. That is not the procedure that is usually followed in the flotation of securities.

This element of the cost of financing under the conditions of hazard of launching an enterprise in such a community at this time I assume to mean the effect upon the margin between what the bonds may be bought at and what they could be sold at. In other words, if the hazard were great, if the market were poor, if the security were not going to be, say, the very highest grade, the margin would have to be greater. In a broad way I would say that it was the method that I have described in my testimony known as underwriting. They say, "For underwriting an issue of [fol. 1820] bonds"; you will see that in the papers frequently. The purchase of bonds at wholesale is regarded

as underwriting those bonds. It is not strictly accurate, but it is a generalization. The hazard referred to there, the element of speculation—I understand that to mean is the hazard of launching such an enterprise. The hazard of launching such an enterprise applies to the question of whether the enterprise is going to be a success or is going to continue to be a success, as the case might be; whether it is a construction or an established property that is going on. The hazard in constructing a gas plant and supplying the citizens of Brooklyn who, on June 1st, 1923, were to a large extent educated to the use of gas would be as to the ability of the plant to sell its product at a fair price, and that is the element of business risk; that is as to whether the company is going to be persecuted or given a square deal and allowed to earn a reasonable return on what they have got. On June 1st, 1923, generally speaking, there was plenty of capital available for the flotation of bonds at that time. I don't remember what call money was at that time. I did not look up and compare the conditions for the flotation of securities on June 1st, 1923, with the present time, but my general recollection would be that they are approximately what they are now. I think I have stated this, but [fol. 1821] this five points profit is amortized over the life of the security. That is the general practice.

The cost of financing would be greater in any project in a case, involving an entirely new project as compared to a case, involving financing for making a short estension or a small addition to a plant. I say that it might be from 25 to 50 per cent greater in the new project than in the established one. I think it is very hard to make a generality on that because you have got to have all the facts about the two things you are comparing. The element of speculation would have to do something with the greater cost of financing an entirely new project. For example—it has not been unusual to have a margin as high as seven or eight points on the new project, where under the same conditions an existing one could be done for five points, we will say. I am not expressing that as a blanket rule that applies to everything, however. I did not make any investigation for the cost this company paid for the financing of its enterprise. We have not been identified with this company's financing.

I was referring to the difference in raising money for a new enterprise or new corporation as distinct from an extension of an old one; I do not have in mind such a new [fol. 1822] enterprise as this being constructed here in the city of Brooklyn. I was just generalizing. As a matter of fact I didn't have anything in mind except a generality as to the conditions.

[fol. 1823] ADDINSELL

Redirect:

The division between the bonds and the junior securities would be about two thirds and one third. I tried to make that a pretty broad generalization. In other words junior securities are also necessary in the launching of a project of this sort. The same general conditions apply to the junior securities as apply to the bonds only it would cost more to float junior securities than it would to float bonds, because the hazard is greater. In my judgment 5 per cent on the junior securities would be a low average, two thirds bonds and one third stock. I will answer it as applying to my experience. My testimony is that for eighteen years to my knowledge the condition of the cost of financing being present has existed. If you sell bonds or stock you have to hire agencies that are equipped to accomplish that.

[fol. 1824] JOHN I. BLANCHFIELD

Direct:

I am acquainted with Mr. Charles B. Mount, Jr. I met him in March in my office. Later he asked me to look up books of account of the so-called vendor companies with him. Mr. Mount came around with me to my office and together we went through the vaults of the Brooklyn Union Gas Company to find such books as we could at the office of 176 Remsen Street; and we endeavored to find such books as we could to aid Mr. Mount in what he was after. He told me he wanted to get all the books of account bearing on the history of the vendor companies. I went through all of the vaults there and finally in the secretary's vault, so-called, we found a number of books. Mr. Mount

and I looked them over and finally made a list of what we had found, and as I recall it, there were about one hundred and fifty of these all told. We went together. And then I left Mr. Mount there to help himself to anything that he might find and I went there myself alone with Mr. Mount to see what I could find subsequent to this visit with him. Mr. Mount took whatever books he desired.

As to the storage facilities of the Brooklyn Union Gas Company in our office, that is, in the building 176 Remsen Street we have nine vaults, one vault being in our own ac-
[fol. 1825] counting room on the sixth floor. In that vault we store all of our current records. Then on either side, that is, in the west wing of the building and in the east wing of the building there is a vault in the cellar and there is one on the store floor, and then there is one above that which is just below the mezzanine floor. That is the same on the east and west wings of the buildings and I went through all of those vaults.

Taking the west wing of the building, the bottom vault is the Construction Department's vault in which they have some of their old records. The next vault above that is the Brooklyn Branch vault in which they store their current records, some of them, and also there are two strong boxes in there, one of which is for the cashier of the Brooklyn Branch and the other for the treasurer of the company. The next above that is the secretary's vault, and above that is stored the records of the chief engineer's office and the office of the engineer of manufacture.

In the east wing of the building in the cellar, there are current records of the Brooklyn Branch office, and on the store floor there are current records of the Brooklyn Branch office. Those are commercial office records. The one above the store floor is the auditor's vault in which he keeps old records and above that is the treasurer's vault.

I went through all of these vaults, looked over the rec-
[fol. 1826] ords in those vaults, and the only vault in which I found anything, that is, relating to the vendor companies was the so-called secretary's vault in the third tier on the west side of the building. There are no storage facilities like these vaults. They have safes, of course, for the storage of their current records. I have investigated in order to ascertain whether there are old records at any of

the branches. The only thing they have at the branches are records relating to their commercial business. I know that on my personal knowledge after a search for old books. Then I might say about our own auditing department, we have probably thirty-five packing cases filled with old records, a list of which we have; and I know that in those cases by the list we have in our office, and those relate only to the Brooklyn Union Business. I prepared a list of the books found and delivered to Mr. Mount.

(Marked Plaintiff's Exhibit No. 296 for identification.)

This exhibit is a list of the books which Mr. Mount and I discovered and which were delivered to him for his use. * * *

[fol. 1827] CHARLES B. MOUNT, JR.

Direct:

I am a certified public accountant and have made a few notes to get the times correctly. I attended Manual Training High School from 1908 to 1912, and while I was in high school, during the summertime, I worked in various lines of work to get experience which would be helpful after I completed the course.

In the summer of 1909 I worked as Assistant Shipping Clerk for the Tidewater Oil Company. In the summer and fall of 1910 as shipping clerk for the Great Western Cereal Company. This concern was later taken over by the Quaker Oats people.

In the summer of 1911 I worked in the firm of W. T. Hatch & Sons, bankers and brokers. In the afternoons during my high school period I worked in the Y. M. C. A. in a clerical capacity.

From 1912 to March, 1914 I was Assistant Business Secretary of the Central Branch Y. M. C. A. in Brooklyn. My services there were more or less on a hotel plan. I had to work certain mornings and certain afternoons and evenings and at the same time I was able to attend school three nights a week, and I took one other position of bookkeeper for a concern in New York.

I attended the Pace Institute of Accountancy two even-
[fol. 1828] ings a week and the secretarial training course

one evening a week. That would for the Y. M. C. A. secretarial work.

I left the Y. M. C. A. in March 1914 to go with the Boss Manufacturing Company on Washington Street, Brooklyn, as cost accountant. I served with them until December, 1915 when I transferred my work to Ernst & Ernst, a firm of certified public accounts. During the time I was employed by them I did general auditing work and installed one system. When I say I installed one system I mean I was sent out by Ernst & Ernst to go over a client's books and decide what charge I mean changes would have to made in those books to produce better results for the client. That is—I installed a system of bookkeeping, changing the system of accounts to present facts and present them in a clearer way; then in May, 1915 I went with the American Bank Note Company as cost accountant for their Ottawa plant. My work there consisted of reporting the costs to the Comptroller at the New York office and making comments and suggestions with respect to the efficiency of the Ottawa plant, and so forth. I recommended a certain method of applying unit costs at that Institution. Which was later adopted by other plants of the same company.

In February, 1917 I went with the Nestles Food Company [fol. 1829] as auditor and stayed with them until July, 1918. During this period they were purchasing milk from concerns all over the United States on a cost-plus basis and shipping it abroad and there was a tremendous amount of work entailed. I had about sixteen accountants working under me besides the regular staff whose duty it was to present facts with respect to cost on these purchase contracts. Also during this period they purchased several plants. I made a trip to Columbus, Ohio and made an investigation of one of the companies that they were dealing with, and upon my report the basis of the purchase of that plant was determined.

I did some teaching during that time too. I taught school at the Pace Institute certain evenings a week at New York and Brooklyn. They had a class conducted in the Central Y. M. C. A. under their management and there was also a class at 30 Church Street, New York City. I was teaching accounting.

In July, 1918 and until November, 1920 I was employed by Haskins & Sells as a supervising senior accountant; they are certified public accountants in New York City. That is ranked as one of the largest and best firms. During the time that I was with them I installed several large systems and made numerous large audits. I conducted several small bank audits and one large bank audit. [fol. 1830] Among the auditing experiences there I had several in the South, in the cottom mill district, which involved practically auditing the whole township as most of those cottom mill audits do. A financing corporation or group of men in New York usually own the stock of those cotton mill towns, and there would be a store, a farm, sometimes a connecting railway, a bank, the cotton mill itself, sometimes an oil mill, to handle the by-products. I made the audit of several of these companies that had all of those ratifications involved. I installed several systems that took several months to work out details. While employed there I did some work for several coal companies and I received an offer from the coal companies to go with them as comptroller. In November, 1920 I went with the West End Coal Company and the Price Pan-Coast Coal Company as comptroller.

Their office is located at 17 Battery Place, New York City. Their mines are located in various parts of Pennsylvania. My work involves principally at the start going over the entire accounting system between November and December of 1920 and working up a system of figures to start a new system as of January 1st, 1921. This system included a complete change in the method of handling their accounts. It included a re-valution of their property, the establishing of invested capital for that period and prior periods upon [fol. 1831] which later I based claims for adjustment of taxes with the Federal Government. During this revaluation of property, I discussed and treated with Dr. R. V. Norris, a prominent mining engineer of Wilkes Barre, Pennsylvania with respects to certain valuations of leaseholds, and collaborated with him on certain values of property and equipment that I established. Dr. Norris was one of the three members of the Federal Coal Commission for several years, and Dr. Norris worked with Robert H.

Montgomery in perfecting the standard accounting systems to be used by coal companies. It has not been adopted by everybody, but the general trend is along those basic lines.

I also prepared certain figures during this time and presented them before the Fair Practices Committee of the Pennsylvania Fuel Commission in order to establish certain prices on coal sales made by these various companies.

I appeared before the Board of Internal Revenue in Washington along with the representative of Cullen & Dykman's office and prepared certain figures to be used in this department. It was at this time that I became acquainted with Colonel Dykman.

At the end of last year I had a discussion with Mr. Dickson, the president of the company, and in January I turned in my resignation. I am still working for them as a matter [fol. 1832] of fact. In January I turned in my resignation and opened an office of my own in New York. Practically the first client I had was the coal companies. They turned over their sales work and some of their mining work to me at the time I started my office. I think that fairly covers my experience.

Mr. Dykman retained me personally on March 13th of this year to examine books of what we call the vendor companies in this case. At that time Colonel Dykman called me into his office and old me that he was under the impression that there were some books of the vendor companies, he knew of some, but he did not know how many there were, he wanted me to look over the books which were in the Brooklyn City Safe Deposit Vaults and give him my idea as just what those books contained. He was particularly interested with respect to the cost of construction if it could be obtained from these books, and he wanted me to give him whatever information I could find, whether it was beneficial or not. That is the first. Then I came back to Colonel Dykman after that interview. I went to the vault that I have spoken of and in that vault I found the last ledger of the seven vendor companies. I made a tabulation of the balances appearing in those books. I also secured from the testimony the *bla*ances relating to the opening entries in the Brooklyn Union Gas Company [fol. 1833] of November 4th, 1895. Then I returned to

Colonel Dykman and told him it would be impossible to get the information from the ledgers from an accountant's point of view that was necessary, because it would be necessary to obtain books of original entry to support the postings in these books to determine the character of the accounts. At that time I told him I thought if there were any other books, of original entry that I could get, I might be able to support some of the figures that were shown in the books.

I was introduced to Mr. Blanchfield and Mr. Blanchfield testified as to how he searched the vaults and how he brought me around to the various vaults; I worked with Mr. Blanchfield and I worked in there alone at different times, and I transferred some of the books either with or without Mr. Blanchfield's knowledge to the Brooklyn City Safe Deposit Vaults. I took what ever books I wanted from the vaults of the Gas Company and worked upon these various books in preparation to testify in this case. Plaintiff's Exhibit No. 296 for identification is a list of books that I have worked on and that I have found in those vaults. I have, also, examined and made use wherever I thought necessary of the minute books of these vendor companies. Mr. Blanchfield made arrangements at the time that any books that I wanted should be turned over to me without any questions and I have had free rein over there to get all the books that I wanted, from the beginning. I have stated that I have examined the final ledgers of the [fol. 1834] vendor companies and took off trial balances from them as of November 4th, 1895. I found those books in balance. They had not been closed out. In other words they were in bal*ene* but not closed out. I also stated that I reported the necessity of getting supporting data and went to the gas company and got the other books on that list and worked with them. I took the various ledgers, in some cases there were four or five ledgers, in the case of the Will*ai*msburgh Company, for instance, there were about eight books, eight ledgers. There does not appear to be in the Williamsburgh Company an opening journal. I took the books that I could find and made as complete a search as I could through those books to find information, and I tabulated certain facts or certain entries in those books and endeavored to get as much information with respect

to those entries as possible. I found references to the minute books in several instances. I found transfers made to profit and loss from the Equipment accounts in round figures of $100,000 or $10,000—I am speaking generally because some companies handled it differently from others—and I endeavored to collect the amounts so transferred in a form that would make it possible to present this information in the aggregate. I found also the entries charging the equipment accounts and crediting Profit & Loss. The [fol. 1835] explanation according to the journal of one of those items which I have in mind has already been given by Col. Dykman when he introduced the minutes the other day, namely that they should write up a real estate account to its true value, making an increase of approximately $247,000, charging Real Estate and crediting Profit & Loss. I traced the explanation to the minute books and found that the main information was contained in the minute books to support that entry. Not in every case did these books such as the minute books, these books of original entry give me sufficient data to support the ledger entries only in a few cases like I have explained to you but not generally. In the cash books it usually gives the name of the party to whom the payment is made. The distribution is made by the bookkeeper who was handling the records at that time and there appears to be no way to prove or disprove the fact that the entry is posted in the right account. There is no supporting evidence to prove that everything that should be charged to capital is charged to capital. Ordinarily in determining the additions to capital accounts, one would obtain vouchers or other evidence of proper charge other than the book itself, and I found such information entirely lacking from the records that I was able to obtain in the vaults. That is—I simply have the names of the [fol. 1836] concerns with which the company dealt and the date and the amount paid that concern without any discription. In very few instances is there a discription of any kind in the cash book. I have already said that in the journals there are transfers back and forth without any or with very little explanation.

Plaintiff's Exhibit 297 for identification I prepared personally from the books. I might say that in addition to that information that once in a while it will say "Bill of

such and such a date paid." That is the only reference. The bill itself is not there. I did not state that before. I am talking now about the cash book, a certain bill paid. No one connected with the plaintiff company took part in the preparation of this schedule. That is, I prepared it and then submitted it to counsel and his associates and it was discussed. The actual preparation of it was done by me. On the left of this schedule, Exhibit 297 for identification, I have placed the names of the various vendor companies and under them the titles of certain accounts. And at the bottom of the page totaled the amount opposite each account by name and assembled that information at the bottom under the same name. The accounts indented are accounts which merely appear on the vendor companies' books and did not appear on the vendee's books. So that in looking at this column I can distinguish between [fol. 1837] accounts which appear on both sets of books and accounts which appear only on the books of the vendor companies, by taking the indented accounts as the latter. I put in the first column headed "B. U. Gas Co. Opening Balances" the amounts shown on the opening journal entry of the Brooklyn Union Gas Company, November 4th, 1895, opposite the name of the account opened on those books. In the column headed "Total" I have placed the figure which represents the total of the three columns to the right of it. So that the second column is the sum of the two, I mean the three following columns, headed "Ledger Balances Transferred to P. & L." and "To Restore Services," respectively. The column headed "Ledger Balances" is under the heading "Available Records of the Vendor Companies," the last four columns on this sheet, and I placed in there the balance as it stood on the books of each vendor company at that date, at November 4th, 1895, after the last posting prior to November 4th, 1895 had been made. In the account headed "Transferred to P. & L." I placed in the black figures representing the total amounts charged to Profit & Loss over that period of my investigation, and credited to the various accounts the name of which appears on the left, these amounts. That is the figures in black represent credits to the respective accounts at the left and charges to Profit & Loss and the red [fol. 1838] figures are the reverse of that. In the services

account of some of the companies, the figures were handles separately; in the otheres they were handled in connection with the meters. Where they were handled separately, I was able to make an analysis of the schedule of the various charges to the Service account over this period. The balances on the books of the vendor company at the time they were consolidated, I deducted from the total of those charges and obtained an amount which would have to be written back to restore them to their total cost of installation. I mean restore the charge to Profit & Loss. That is not the only account that is handled in that way—services. The other accounts which were handled direct to profit and Loss are in this "Transferred to P. & L." column. The Service account was evidently treated as an operating account for these vendor companies, and I have restored the cost of installation of those serivces by putting the amounts in a separate column. As I have them there, they are charged into capital account now. But in actual practice they were charged as an operating expense. It was the habit of these companies with certain accounts, to charge balances off annually, to Profit & Loss and treat the account as a job account. And I have in these instances as shown on this schedule, restored those amounts in the col- [fol. 1839] umn headed "Total." They were charged to operating expenses at the end of the various periods. They run th-ough an account called Services, though they were not charged direct to Expense. The titles at the left do not include the accounts in those vendor books. I chose the accounts, which in my opinion, represented the fixed capital of the vendor and vendee companies. I neglected to state before that I further proved this information in the beginning by taking the information which I obtained from the testimony and checking it against the original journal of the Brooklyn Union Gas Company, including the postings into the ledger, which is conclusive of the balances being as set forth on this statement; and when I refer to the testimony, I am referring to the figures contained in the testimony before the so-called Stevens Committee which the counsel gave me for the purpose of taking off the journal entries and comparing them. Those I have compared with the Brooklyn Union Gas Company themselves and so I have checked these with the original ledgers of the Brooklyn

Union Gas Company. I found no books of account of the Greenpoint Gas Light Company, the Mutual Gas Light Company or the Citizens Gas Light Company. There is one book or one ledger of the Union Gas Light Company from 1861 to 1885, but there is a break of seven years be-
[fol. 1840] tween the last available record of the Union Gas Light Company and the time that there was a consolidation between the Union Gas Light Company and the Citizens Gas Light Company into what is known as the Citizens Gas Light Company of Brooklyn. There is a record of the Citizens Gas Light Company and the Union Gas Light Company from April 1st, 1892 to November 4th, 1895, which is really a misnomer. It is really a branch record, and it is not handled as an individual company. Some bookkeeper evidently tried to keep the entries appearing on the Citizens Gas Company of Brooklyn in divisions as to the Union Company and the Citizens Company. These books are not in balance, but if you take the two books together they will prove to the Citizens Gas Company of Brooklyn ledger. In my opinion as an accountant based on the examination I have made of the seven vendor companies, it is not possible to determine from them the original cost of construction to the vendors of the property a-quired by the plaintiff on or about November 4th, 1895. I do not know what the people had in 1895 in the way of physical properties.

Mr. J. A. Dykman: I think I shall offer in evidence to complete the record, schedules both 296 and 297 for identification because they show what we have been able to find for identification. I shall offer this simply for convenience sake, that is, Exhibit 296 for identification, which is the list [fol. 1841] of books. I think we should have in this record this list of books.

(Received in evidence and marked Plaintiff's Exhibit No. 296.)

Mr. Deegan: I will withdraw my objection.

(Plaintiff's Exhibit No. 297 for identification was thereupon received in evidence.)